## UNITED STATES DISTRICT COURT SOUTHERN DISTRICT OF TEXAS HOUSTON DIVISION

Aspire Commodities LP, Raiden	)	
Commodities, LP	)	
	)	
Plaintiff,	)	
	)	
V.	)	Case No. 4:14-cv-0111
	)	
GDF-SUEZ Energy North America, Inc.,	)	JURY TRIAL DEMANDED
Ennis Power Company, LLC, Wise County	)	
Power Company, LLC, Midlothian Energy,	)	
LLC, Hays Energy, LLC, Wharton County	)	
Generation, LLC, and Coleto Creek	)	
Power, LP,	)	
	)	
Defendants.	)	

# ASPIRE COMMODITIES L.P.'S AND RAIDEN COMMODITIES, L.P.'S FIRST AMENDED COMPLAINT FOR DAMAGES AND INJUNCTIVE AND DECLARATORY RELIEF

Aspire Commodities L.P. ("Aspire") and Raiden Commodities L.P. ("Raiden"), for their First Amended Complaint for Damages and Injunctive and Declaratory Relief against GDF SUEZ Energy North America, Inc., Ennis Power Company, LLC, Wise County Power Company, LLC, Midlothian Energy, LLC, Hays Energy, LLC, Wharton County Generation, LLC, and Coleto Creek Power, LP (collectively "GDF Suez"), states:

## **INTRODUCTION**

GDF Suez intentionally withholds electricity generation during times of tight supply, for reasons not explained by rational notions of supply and demand, but to use its market power in times of such tight supply to drive up prices in the ERCOT Real Time market and to manipulate the contract prices in the derivative commodities markets.

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GDF Suez's intentional withholding is done to manipulate the price of electricity contracts on commodities markets, allowing GDF Suez to uniquely predict where the commodities markets will go on days of its intentional withholding, and allowing it a unique profit opportunity.

GDF Suez's manipulation of the commodities markets through its intentional withholding schemes violates the Commodities Exchange Act, which has caused damage to Aspire, Raiden and other similarly situated commodities traders.

Aspire and Raiden are entitled to be compensated for the damages GDF Suez's intentional manipulation has caused them and GDF Suez's illegal actions should be permanently enjoined.

### SUMMARY

The Electric Reliability Council of Texas ("ERCOT") operates a Real-Time market for electricity that uses economic signals to manage the required balance between supply and demand in the Texas electricity grid. When supply is tight, market prices for generators' electricity is high to incent more production. When supply exceeds demand, prices are low.

When the market prices exceed a generator's marginal costs, the generator should be willing to generate energy and offer it to the grid at such prices. A generator who chooses not to generate when market prices exceed its marginal costs irrationally foregoes the opportunity to make a profit and thus acts contrary to self-interest.

GDF Suez often intentionally withholds energy generation, through multiple schemes, in circumstances of tight supply and when the market price exceeds its marginal costs, sometimes when they significantly exceed GDF Suez's marginal costs. It does so with the specific intent to drive the market price higher both as an end and as a means to manipulate the price of electricity contracts on commodities markets, and it has succeeded at doing so.

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GDF Suez knows that the market price for electricity in ERCOT drives the prices for electricity at certain "hubs" within ERCOT, which directly affect the prices of contracts on commodities markets. Thus, by intentionally withholding generation during times of tight supply and creating an artificially high ERCOT market price – at times known only to it – GDF Suez knows it will also create artificially high prices in commodities markets, which assures the value of its long positions on the commodities markets, allows GDF Suez to take long positions on the commodities markets, allows GDF Suez to take long positions on the commodities for GDF Suez. Its trading gains based on its manipulation of the ERCOT market price explain its willingness not to generate electricity when the market price exceeds its marginal costs.

GDF Suez's withholding schemes allow GDF Suez to generate the certainty of profit for itself and at times of its choosing not known to the public. Its actions create artificial prices in the commodities markets, which cause higher prices, volatility, uncertainty, less liquidity, and harm to traders like Aspire and Raiden.<sup>1</sup>

This practice is not new to GDF Suez. The College of Competition Prosecutors of the Belgian Competition Council found that GDF Suez's Belgian entity, Electrabel, has engaged in the same manipulative activity, through similar withholding schemes. *See* Ex. 1.

GDF Suez should be ordered to compensate Aspire and Raiden for the losses they have suffered due to GDF Suez's intentional manipulation of commodities markets and to stop its intentional manipulation of the commodities markets in violation of the CEA.

<sup>&</sup>lt;sup>1</sup> Separately, its machinations cause energy prices within ERCOT to be higher than they would be without its manipulation, which cause ratepayers to pay higher electricity bills.

## JURISDICTION AND VENUE

Plaintiffs' claims arise under the CEA, 7 U.S.C. § 1 *et. seq.* Thus, this Court has federal question jurisdiction pursuant to 28 U.S.C. §1331 and it has ancillary jurisdiction pursuant to 28 U.S.C. §1367 over the included common law claims because they are so intertwined with Plaintiffs' claim under the CEA that they form part of the same case and controversy.

This Court is the proper venue for this claim pursuant to 28 U.S.C. § 1391 because the actions and schemes described herein, which violate the CEA, originate and are directed from GDF SUEZ Energy North America, Inc.'s office in Houston, Texas.

#### FACTS

## The Basics of the ERCOT Markets

1. ERCOT was the first independent system operator in the United States, created in 1996 to determine the dispatch of electricity within a designated geographic region.

2. The Public Utility Commission of Texas ("PUCT") is ERCOT's main regulator.

3. GDF SUEZ Energy North America, Inc. controls the electric generation within ERCOT of the following entities: Ennis Power Company, LLC, Wise County Power Company, LLC, Midlothian Energy, LLC, Hays Energy, LLC, Wharton County Generation, LLC, and Coleto Creek Power, LP. Those individual limited liability companies may have multiple power generators, capable of generating electricity.

4. ERCOT operates two separate but related markets: a Day-Ahead Market and a Real-Time Market. Since electricity is a "real time" commodity, no physical electricity can be exchanged prior to the moment of production and consumption. Hence the Day-Ahead Market is a forward market and the Real-Time Market is the physical market.

5. In theory, the results of the Day-Ahead Market provide a forecast of what market participants and ERCOT believe will happen during the operating day, i.e. the following day. To

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the extent the results from the Day-Ahead Market are good approximations of actual conditions, then ERCOT will not be required to intervene in the market. In contrast, to the extent that actual conditions are not consistent with the expectations and results of the Day-Ahead Market, then ERCOT, as the system operator, will be required to intervene in the market with the likely effect that prices will deviate between the Day-Ahead Market and the Real Time Market. Indeed, one commonly used measure for how well the wholesale market is working is the degree of price convergence between the Day Ahead and Real Time markets.

6. The two primary purposes for the Day-Ahead Market are (1) to provide a mechanism whereby market participants can reduce their exposure to real time price volatility and(2) to create a mechanism through which market participants are incentivized to provide the dispatcher with accurate information about their expected generation in the Real Time market. The more accurate the information the dispatcher receives in the Day-Ahead Market (i.e. the more consistent with the actual generation in real time), the more reliable and cost effective will be the real time dispatch.

7. At all times ERCOT must balance the supply of electricity with demand. It must also ensure that the system reliably delivers electricity, within the limits of the transmission lines. ERCOT uses economic signals sent by the "market price" for electricity, called the Locational Marginal Price ("LMP") to both balance the system and maintain its reliability. The LMP is set at individual nodes where energy is injected and removed from the system and changes throughout the day, in five minute intervals, as real-time conditions of supply and demand (and other factors such as transmission congestion) change. As a general matter, when supply is low relative to demand, the LMP is high to incent more generation. When supply is high relative to demand, the LMP is low to incent less energy generation.

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8. In addition to the Real-Time LMP, ERCOT uses the available inputs for the upcoming hour to calculate a "Look- Ahead LMP" in five minute intervals, which is intended to foreshadow expected Real Time LMP prices in the next hour based on then-available information.

9. Unlike years past, generators, like GDF Suez, do not offer electricity to the grid at a rate approved by a regulator. Rather, they offer energy to the ERCOT grid in price/quantity tandems of their choosing. They tell ERCOT the amount of energy they are willing to generate and sell at a particular price. These are called offer curves, because generators are willing to offer more energy at higher LMP prices and less energy at lower LMP prices. ERCOT uses the generators' offer curves to match supply and demand and balance the system, attempting to use the lowest-cost energy to serve the next unit of demanded energy. Generators can change their offer curves during the day but must supply an offer curve at least one-hour in advance of the hour in which they want the new offer curve to be effective. Thus, if a generator wants to change its offer curve to be effective at the hour ending at 1:00 p.m., it must submit it at the beginning of the hour ending at 12:00 p.m.

10. ERCOT takes the generator's energy if it is offered at a price below the thenexisting LMP. For example, if a generator offers 30 MW at an LMP of \$50 per MWh, ERCOT will dispatch the generator's energy only if the LMP is at or above \$50 per MWh. If there is an excess of energy at a particular LMP, ERCOT will lower the LMP to dissuade and/or possibly prevent some energy generation. If ERCOT does not have sufficient energy offered at a particular LMP, then it will raise the LMP to incent more generation.

11. A generator can effectively prevent dispatch of its energy by offering it to the grid at prices above the LMP. If that generator's energy is needed, such as when supply is tight,

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ERCOT will increase the LMP to attract and capture the needed energy, offered only at that higher LMP.

12. ERCOT has set a maximum LMP price of \$5,000 per MWh, which is much higher than the LMP caps for other independent system operators in other parts of the country.

13. LMP node prices determine the LMP prices at various "hubs" within ERCOT. Those "hub" prices are the basis for various listed future contracts on the InterContinental Exchange ("ICE"). Typically, as hub prices increase – because node LMPs have increased – so do the prices for futures contracts on ICE associated with that hub.

14. The availability of ICE futures contracts allow market participants, including generators like GDF Suez, to adjust and hedge their exposure to ERCOT market volatility. For ERCOT the most widely traded, and hence the most liquid, contract on the ICE market is the Balance of the Day (BalDay) contract for PeakWD (Hours Ending 7-22 on weekdays) for the North Hub Settlement Point HB\_NORTH. Many of Plaintiffs' losses are associated with trades relating to this contract, as described below. The eventual clearing price for this contract is the average settlement price as determined from ERCOT's Real Time node LMPs that determine the HB\_NORTH hub price.

15. ERCOT also allows "virtual trades," pursuant to which participants trade on differences between the Day-Ahead Market and the Real Time market. Virtual trades are an additional mechanism to hedge the risk associated with the real time market.

16. ERCOT relies upon generators to act rationally in response to its economic signals in order to maintain system balance and reliability. One such assumption is that generators will produce energy when the LMP significantly exceeds their marginal costs of such production. PUCT's substantive rules and the Texas Public Utilities Regulatory Act make

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withholding of energy a prohibited act if that generator has "market power." *See* PURA § 39.157; P.U.C. Subst. R.25.503(g)(7). The prices at which a generator offers energy to the grid may be evidence that the generator is withholding production. According to PUCT, "prices offered by a generation entity with market power may be a factor in determining whether the entity has withheld production. A generation entity with market power that prices its services substantially above its marginal cost may be found to be withholding production[.]" P.U.C. Subst. R.25.504(d).

17. PUCT, however, assumes that generators who control less than 5% of systemwide generation capacity do not have market power. This "small fish" rule assumes – contrary to reality, as explained below – that a generator with less than 5% of system-wide generation capacity cannot affect LMP prices through its supply or its withholding of energy and that it cannot abuse market power by such withholding. *See* P.U.C. Subst. R.25.504(c). Thus, PUCT does not attempt to regulate the generation machinations of such "small fish."

18. Within ERCOT small fish "swim free" of PUCT's oversight with regard to energy generation or withholding of energy generation, even when they intentionally withhold energy generation to create artificially high market prices.

19. Potomac Economics, an agent of PUCT and its Independent Market Monitor, summarized PUCT's "small fish" rule, stating that according to PUCT "market participants controlling less than five percent of the capacity in ERCOT by definition do not possess ERCOT-wide market power under the PUCT rules. Hence, these participants can submit very high-priced offers that, per the PUCT rule, will not be deemed to be an exercise of market power."

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20. GDF Suez controls just less than 5% of the electricity generation within ERCOT and therefore PUCT considers it a "small fish." PUCT does not attempt to regulate GDF Suez's generation decisions. It swims free.

21. GDF Suez's freedom from PUCT's oversight has been memorialized in a "Voluntary Mitigation Plan" ("VMP") with PUCT. Upon information and belief, GDF Suez sought the VMP – which applies only to the ERCOT market – in early 2013 with the intention of manipulating prices in the commodities market without fear of punishment from ERCOT. As long as GDF Suez adheres to the terms of its plan, that plan "provides GDF SUEZ an absolute defense against an allegation pursuant to PURA § 39.157(a) and P.U.C. Subst. R.25.503(g)(7) of an abuse of market power through economic withholding[.]" Shortly after GDF Suez obtained its VMP, it began manipulating prices in commodities markets, as described herein.

22. PUCT's conclusion that generators controlling less than 5% of generation capacity within ERCOT cannot affect LMP prices through withholding energy production is simply wrong. During times when there is tight supply, the withdrawal of even a small amount of energy can cause LMPs to increase dramatically, even up to the \$5,000 cap.

23. Potomac Economics agrees that contrary to ERCOT's assumption that "small fish" lack economic power, "small fish," in reality, can drive LMP prices by intentionally withholding generation.

24. In its State of the Market Report for 2012, Potomac Economics recognized, "[a]lthough 5 percent of total ERCOT capacity may seem like a small amount, the potential market impacts of a market participant whose size is just under the 5 percent threshold choosing to exercise flexibility and offering a significant portion of their fleet at very high prices could be large." Potomac Economics noted that "[t]here were 450 hours over [2011 and 2012] with less

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than 4,000 MW of surplus capacity . . . During these times a large 'small fish' would be pivotal and able through their offers to increase the market clearing price, potentially [driving it] as high as the system-wide offer cap."

25. GDF Suez has done exactly that. During times of tight supply, through different schemes, it intentionally withholds otherwise available generation to drive LMPs to artificially high levels, even to the \$5,000 cap, both as an end and as a means to manipulate commodities contracts on ICE to create additional profit and hedging opportunities for itself.

26. Upon information and belief, GDF Suez has met with outside consultants regarding its conduct, who informed GDF Suez that it should cease its illegal, manipulative conduct.

## The Basics of Transacting Electricity As A Commodity and The Manipulative Effect Generators Can Impart on the Commodities Markets

27. There are three primary structures for transacting in electricity: (1) bilateral contracts between buyers and sellers; (2) the futures market, e.g., the Intercontinental Exchange ("ICE"), the Nodal Exchange or the Chicago Mercantile Exchange (NYMEX); and (3) the pool, i.e. ERCOT itself.<sup>2</sup> These three structures use different types of instruments, with different terms and conditions, to facilitate and bring about the exchange of electricity. Assuming, as is true in ERCOT, there are no rules requiring participants to engage in specific types of transactions,<sup>3</sup> then, in a well-functioning market, despite the differences in the instruments used in each structure, there are factors, such as price, that keep them intimately linked.

<sup>&</sup>lt;sup>2</sup> These three structures are present in any of the seven pools operated by Regional Transmission Operators (RTO) or Independent System Operators (ISO), *i.e.*, the California ISO (CAISO), Electricity Reliability Council of Texas (ERCOT), Southwest Power Pool (SPP), Midcontinent ISO (MISO), PJM Interconnection, ISO-New England and the New York ISO.

<sup>&</sup>lt;sup>3</sup> For example, in the early stages of the Australian electricity market generators were required to have almost all of their capacity under bilateral contract. In contrast, the initial rules in California required participants to transact through the pool (CAISO) for their electricity needs.

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28. In particular, the description for the *ERCOT Houston 345kV Real-Time Peak Daily Fixed Price Future* contract traded under the symbol EHD on ICE is, "a daily cash settled Exchange Futures Contract based upon the mathematical average of peak hourly electricity prices published by ERCOT for the location specified in Reference Price A.<sup>4</sup>" Thus, for this particular contract, the settlement price is based solely on the average of peak hourly prices created and published by ERCOT.

29. At any point in time the price at which the above contract trades prior to settlement is simply the market's expectation regarding the actual value of those average peak hourly prices. In other words, prior to settlement, commodities traders use known information about market conditions to form their own expectations as to what the final settlement price may be. These relationships can be expressed more succinctly as:

1.  $P_{C}^{Futures SP} = \left(\sum_{t=1}^{T} \sum_{n=1}^{N} P_{t,n}^{ERCOTSP}\right) / (T+N).$ Where:

 $P_C^{Futures SP}$  = the settlement price i.e., the price at expiration, for the futures contract of type "C",

 $P_{t,n}^{ERCOT SP}$  = the ERCOT settlement price at time (t) for node (n),

T = the length of the contract in hours, e.g., T = the 16 hours between HE7 - HE22<sup>5</sup> Monday thru Friday and excluding NERC<sup>6</sup> Holidays for peak contracts and all other hours for off-peak contracts,

and

N = the number of settlement points defined by the location of the contract.

2.  $P_i^{Futures SP} = E[P_c^{Futures SP}].$ 

Where:

<sup>5</sup> Hour ending.

<sup>&</sup>lt;sup>4</sup> <u>https://www.theice.com/products/6590452</u>

<sup>&</sup>lt;sup>6</sup> North American Electric Reliability Corporation.

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 $P_i^{Futures SP}$  = the price for contract of type "C" at time interval (i) i.e., the price at which the futures contract trades at prior to expiration.

and,

 $E[P_{C}^{Futures SP}] = the expected value of the settlement price for contract of type "C."$ 

30. Equations (1) and (2) show that the futures contract price – either at expiration or prior to settlement – depend directly on either the actual ERCOT prices or the expected ERCOT prices. Hence, by definition, any action or information that affects the relevant ERCOT prices, or the expected prices, will have an effect on the futures price. This is not to say, however, that the futures contract price is mathematically determined prior to settlement; commodities traders in the market set the price of each futures trade based on their respective expectations as to the final clearing price. In a competitive market, i.e., one that, among other things, is not being manipulated, this transmission of information from the physical market (ERCOT) to the futures market (e.g., ICE) should lead to more efficient outcomes and is a positive characteristic. However, to the extent that prices and information in ERCOT are capable of being manipulated, then the futures prices will be similarly distorted.

31. The primary tool that ERCOT, like every regional transmission operator (RTO) or independent system operator (ISO) in the United States, uses to achieve non-discriminatory access to the electricity grid is bid-based Security Constrained Economic Dispatch or "SCED." Broadly speaking, the primary output of the SCED tools is a set of instructions – in the form of Generator Set Points (Base Points) LMP – that reflect which generating facilities should be running and at what quantity, as a function of, among other things, the offer prices they have voluntarily provided to ERCOT. According to the ERCOT Nodal Protocols:

#### 6.5.7.3 Security Constrained Economic Dispatch

(1) The SCED process is designed to simultaneously manage energy, the system power balance and network congestion through Resource Base Points and calculation of LMPs

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every five minutes...The SCED process evaluates Energy Offer Curves, Output Schedules and Real-Time Market (RTM) Energy Bids to determine Resource Dispatch Instructions by maximizing bid-based revenues minus offer-based costs, subject to power balance and network constraints.<sup>7</sup>

32. Accordingly, the SCED algorithm produces an LMP every 5 minutes for every electrical bus on the system – presently over 11,000 prices. ERCOT then uses this set of prices to create settlement prices at nearly 600 locations throughout their footprint. These prices are in 15-minute intervals and represent locations on the grid where buyers and sellers can transact in the ERCOT-operated Day Ahead and Real Time Markets, i.e., the "pool". According to the ERCOT Nodal Protocols these Settlement Prices are used in the billing and settlement process and represent the "final" prices:

### 6.6 Settlement Calculations for the Real-Time Energy Operations

## 6.6.1 Real-Time Settlement Point Prices

Real-Time energy Settlements use Real-Time Settlement Point Prices that are calculated for Resource Nodes, Load Zones, and Hubs. For each Security-Constrained Economic Dispatch (SCED) Locational Marginal Price (LMP) calculated at each Settlement Point in the SCED process...

33. Using ICE as an example, futures markets have not (and will not) established a contract at each of the nearly 600 locations for which ERCOT produces a settlement price. Rather, the futures markets use the far less granular "hubs" as the basis for their contracts, of which there are four in ERCOT: North 345kV Hub, South 345kV Hub, Houston 345kV Hub, and West 345kV Hub.<sup>8</sup> Each Hub is comprised of a number of individual Hub Buses. Section 3.5.2 of the ERCOT Nodal Protocols provides the description of all the Hub Buses that comprise the North 345 Hub;<sup>910</sup>

<sup>&</sup>lt;sup>7</sup> ERCOT Nodal Protocols – Section 6.

<sup>&</sup>lt;sup>8</sup> ERCOT also publishes prices an ERCOT Hub Average 345kV Hub and an ERCOT Bus Average 345kV Hub

<sup>&</sup>lt;sup>9</sup> ERCOT Nodal Protocols – Section 3.

# 3.5.2 Hub Definitions

# 3.5.2.1 North 345 kV Hub (North 345)

(1) The North 345 kV Hub is composed of the following Hub Buses:

	ERCOT Operations		
No.	Hub Bus	kV	Hub
1	ANASW	345	NORTH
2	CN345	345	NORTH
3	WLSH	345	NORTH
4	FMRVL	345	NORTH
5	LPCCS	345	NORTH
6	MNSES	345	NORTH
7	PRSSW	345	NORTH
8	SSPSW	345	NORTH
9	VLSES	345	NORTH
10	ALNSW	345	NORTH
11	ALLNC	345	NORTH
12	BNDVS	345	NORTH
13	BNBSW	345	NORTH
14	BBSES	345	NORTH
15	BOSQUESW	345	NORTH
16	CDHSW	345	NORTH
17	CNTRY	345	NORTH
18	CRLNW	345	NORTH
19	CMNSW	345	NORTH
20	CNRSW	345	NORTH
21	CRTLD	345	NORTH
22	DCSES	345	NORTH
23	EMSES	345	NORTH
24	ELKTN	345	NORTH
25	ELMOT	345	NORTH
26	EVRSW	345	NORTH
27	KWASS	345	NORTH
28	FGRSW	345	NORTH
29	FORSW	345	NORTH
30	FRNYPP	345	NORTH
31	GIBCRK	345	NORTH
32	HKBRY	345	NORTH

<sup>&</sup>lt;sup>10</sup> A similar description for each Hub can be found in Section 3 of the ERCOT Nodal Protocols.

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	EPCOT Operations		
No.	Hub Bus	kV	Յութ
33	VI VRN	345	NORTH
34	IFWFT	345	NORTH
35	KNEDI	345	NORTH
36	KI NSW	345	NORTH
37	LCSES	345	NORTH
38	LICSUS	245	NORTH
39	LIGSW	245	NORTH
40	LEG	245	NORTH
41	LFKSW	345	NORTH
42		345	NORTH
42	MLSES	345	NORTH
43	MCCREE	345	NORTH
44	MDANP	345	NORTH
43	ENTPR	345	NORTH
40	NCDSE	345	NORTH
47	NORSW	345	NORTH
48	NUCOR	345	NORTH
49	PKRSW	345	NORTH
50	KMCHI	345	NORTH
51	PTENN	345	NORTH
52	RENSW	345	NORTH
53	RCHBR	345	NORTH
54	RNKSW	345	NORTH
55	RKCRK	345	NORTH
56	RYSSW	345	NORTH
57	SGVSW	345	NORTH
58	SHBSW	345	NORTH
59	SHRSW	345	NORTH
60	SCSES	345	NORTH
61	SYCRK	345	NORTH
62	THSES	345	NORTH
63	TMPSW	345	NORTH
64	TNP ONE	345	NORTH
65	TRCNR	345	NORTH
66	TRSES	345	NORTH
67	TOKSW	345	NORTH
68	VENSW	345	NORTH
69	WLVEE	345	NORTH

<sup>&</sup>lt;sup>11</sup> The Hub Bus for the Midlothian combined-cycle gas generating facility.

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	ERCOT Operations		
No.	Hub Bus	kV	Hub
70	W_DENT	345	NORTH
71	WTRML	345	NORTH
72	WCSWS	345	NORTH
73	WEBB	345	NORTH
74	WHTNY	345	NORTH
75	WCPP <sup>12</sup>	345	NORTH

(2) The North 345 kV Hub Price is the simple average of the Hub Bus prices for each hour of the Settlement Interval of the Day-Ahead Market (DAM) in the Day-Ahead and is the simple average of the time-weighted Hub Bus prices for each 15-minute Settlement Interval in Real-Time, for each Hub Bus included in this Hub.

• • •

(4) The Real-Time Settlement Point Price of the Hub for a given 15-minute Settlement Interval is calculated as follows:

**RTSPP** North345 = Max [-\$251, (RTRSVPOR +  $\underset{hb}{S}$ (HUBDF hb, North345 \* ( $\underset{y}{S}$ ) (RTHBP hb, North345, y \* TLMP y) / ( $\underset{y}{S}$ TLMP y)))], if HB North345 $\neq$ 0

**RTSPP** *North345* = **RTSPP***ERCOT345Bus*, **if HB** *North345*=**0** 

Where:

 $RTRSVPOR = \sum_{y} (RNWF_{y} * RTORPA_{y})$   $RNWF_{y} = TLMP_{y} / \sum_{y} TLMP_{y}$   $RTHBP_{hb, North345, y} = \sum_{b} (HBDF_{b, hb, North345} * RTLMP_{b, hb, North345, y})$   $HUBDF_{hb, North345} = IF(HB_{North345}=0, 0, 1 / HB_{North345})$   $HBDF_{b, hb, North345} = IF(B_{hb, North345}=0, 0, 1 / B_{hb, North345})$ 

The above variables are defined as follows:

Variable	Unit	Description
RTSPP North345	\$/MWh	<i>Real-Time Settlement Point Price</i> —The Real-Time Settlement Point Price at the Hub, for the 15-minute Settlement Interval.

<sup>12</sup> The Hub Bus for the Wise County Natural Gas Power Plant.

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RTHBP <sub>hb,</sub> North345, y	\$/N	IWh	Real-Time Hub Economic Dispe at Hub Bus hb f	Real-Time Hub Bus Price at Hub Bus per Security-Constrained Economic Dispatch (SCED) interval—The Real-Time energy price at Hub Bus hb for the SCED interval y.					
RTRSVPOR	\$/N	ſWh	<i>Real-Time Rese</i> Reserve Price fo Interval.	<i>Real-Time Reserve Price for On-Line Reserves</i> —The Real-Time Reserve Price for On-Line Reserves for the 15-minute Settlement Interval.					
RTORPA <sub>y</sub>	\$/N	IWh	<i>Real-Time On-I</i> Time Price Add	<i>Line Reset</i> ler for On	<i>rve Price Adder per interval</i> —The Real- I-Line Reserves for the SCED interval y.				
RNWF y	non	e	<i>Resource Node</i> the Resource Node of the SCED int	<i>Resource Node Weighting Factor per interval</i> —The weight used in the Resource Node Settlement Point Price calculation for the portion of the SCED interval y within the Settlement Interval.					
RTLMP b, hb, North345, y	\$/N	IWh	<i>Real-Time Locational Marginal Price at Electrical Bus of Hub Bus</i> <i>per interval</i> —The Real-Time LMP at Electrical Bus <i>b</i> that is a component of Hub Bus <i>hb</i> , for the SCED interval <i>y</i> .						
TLMP <sub>y</sub>	sec	ond	<i>Duration of SCED interval per interval</i> —The duration of the portion of the SCED interval <i>y</i> within the 15-minute Settlement Interval						
		HU	BDF hb, North345	none	<i>Hub Distribution Factor per Hub Bus</i> —The distribution factor of Hub Bus <i>hb</i> .				
		HB	DF <sub>b, hb, North345</sub>	DF <sub>b, hb, North345</sub> none <i>Hub Bus Distribution Factor per Electrical</i> of <i>Hub Bus</i> —The distribution factor of Electrical Bus <i>b</i> that is a component of Hub Bus <i>hb</i> .					
У	non	e	A SCED interval in the 15-minute Settlement Interval. The summation is over the total number of SCED runs that cover the 15-minute Settlement Interval.						
b	non	e	An energized Electrical Bus that is a component of a Hub Bus.						
B hb, North345	non	e	The total number of energized Electrical Buses in Hub Bus <i>hb</i> .						
hb	non	e	A Hub Bus that	is a com	ponent of the Hub.				
HB North345	non	e	The total number energized comp	er of Hub onent in e	Buses in the Hub with at least one each Hub Bus.				

34. Thus the Real Time Settlement Point Price for the North 345 kV Hub as calculated by ERCOT is used to settle the *ERCOT North 345kV Real-Time Peak Daily Fixed Price Future* contract on ICE and is a function of the Real-Time Hub Bus Prices for each of the 75 Hub Buses which are, in turn, a function of Real-Time Location Marginal Prices for the 75 Hub Buses.

35. In other words, the Real-Time LMP for each of the 75 Hub Buses used to make up the North 345 kV Hub determines the price at which the ICE contract settles. Thus anything that affects these LMPs will, by definition, affect the ICE settlement price. Since the price of the

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contract prior to expiration is simply the expectation of the settlement price, anything that affects this expectation will, again by definition, affect the price at which the contract trades prior to expiration.

## 36. According to ERCOT the LMP at every Electrical Bus is calculated as follows:<sup>13</sup>

The LMPs at Electrical Buses are calculated as follows:

$$LMP_{EB} = / - \mathop{a}_{line}^{a} SF_{EB}^{line} \times SP^{line}$$

Where:

LMP <sub>EB</sub>	is LMP at Electrical Bus <i>EB</i>
λ	is system lambda (Shadow Price of power balance)
$SF_{EB}^{line}$	is Shift Factor for Electrical Bus EB for transmission line
SP <sup>line</sup>	is Shadow Price for transmission line.

37. The first part of the RHS of the LMP equation, *i.e.*, the system lambda ( $\lambda$ ) is the additional cost of providing another unit of electrical energy absent any congestion on the transmission system, while the second,  $\left(-\overset{\circ}{\underset{line}{}}SF^{line}_{EB} \times SP^{line}\right)$ , is the pecuniary effect of any congestion. Thus the LMP for a given electrical bus is the result of two components – the cost of energy and the cost of congestion on the transmission network. Anything that effects either of these two components will directly affect the LMP for that Electrical Bus, and by extension any other price, such as a Hub Price that makes use of the LMP for this Electrical Bus. And, once again, if the ERCOT LMP price is affected, there will be a transmission of that effect to the futures markets.

<sup>&</sup>lt;sup>13</sup> ERCOT Business Practice Manual – Setting the Shadow Price Caps and Power Balance Penalties in Security Constrained Economic Dispatch, p.6.

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38. The system lambda or, as it is called in other markets, the Marginal Energy Cost (MEC) or System Energy Price, is the cost of the next increment of energy ignoring the effects of managing any congestion on the grid. In essence, it is the next incremental "step" of the hypothetical aggregate electricity supply curve shown in Figure 1. This curve is created by the horizontal summation of all the individual generation offers in the market and is also known as a "supply or offer stack."



39. The hypothetical supply curve in this figure shows that the Marginal Energy Cost  $(\lambda)$  of increasing output from 200 megawatts (MWs) to 201MWs is \$20. In fact, any increase in output between 100 and 300MWs incurs the same MEC. However, the MEC of going from 300MWs to 301MWs is \$40. Similarly the MEC of moving from 400MWs of production to 401MWs is \$50. Assuming that output is 401MWs, then within the context of ERCOT's methodology, the LMP at any electrical bus will be \$50 (*i.e.*,  $\lambda$ ) plus whatever the congestion component is for that specific electrical bus. Accordingly, it is easy to see how the system lambda flows directly to the futures contract price.

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40. In the hypothetical world of Figure 1, suppose when the system reached 400MWs of production, there is only a single generator left. That is, if the electricity demand is greater than 400MWs, then only a single generator is able to meet the load. This generator would be called the pivotal supplier and would have market power, *i.e.*, the ability to raise price above marginal cost. In Figure 1, suppose that this monopoly generator decided to offer their power not at \$50/MW but rather \$5000/MW. In this case, whenever the power balance is greater than 400MWs then the LMP for *every electrical bus* in ERCOT will be \$5000/MW – the system lambda – plus the congestion component. Given the linkage between the LMPs calculated in ERCOT and the futures prices, the effect of this exercise of market power in ERCOT flows through to the prices in the futures markets as well. GDF Suez knows this and acts on it to manipulate commodities prices.

## Industry Recognition That GDF Suez's Withholding Creates Artificially High Prices on Commodities Markets

41. It is common knowledge in the industry that the LMP prices of electricity in the ERCOT Real Time market affect the price of electricity contracts on commodities markets such as ICE.

42. According to Potomac Economics, "prices in the real-time energy market are very important because they set the expectations for prices in the forward markets where most transactions take place. Unless there are barriers preventing arbitrage of the prices between the spot and forward markets, the prices in the forward market should be directly related to the prices in the spot market." Thus, GDF Suez has the ability to create artificial prices in commodities markets through its creation of artificially high prices in the ERCOT Real Time market.

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43. For example, one financial product traded on ICE is the balance-of-the-day average peak power price for various nodes in the ERCOT market. GDF Suez's manipulation of LMPs within ERCOT causes the balance-of-the-day average peak power price to also increase. This fact has again been observed by Platts. It observed:

On six of the nine days when GDF Suez raised its power prices for between 564 and 1,332 MW near the system-wide offer cap – either during the price hike or in the first hour of trading thereafter – balance-of-the-day average peak power prices for deals made on the IntercontinentalExchange rose by 7% to 104%.

44. Aspire has also identified this effect. For the exemplar days identified below on which GDF Suez engaged in either economic or physical withholding of energy, Aspire has reconstructed supply and demand curves. The result of those re-constructed supply and demand curves shows that GDF Suez's withholding materially caused the balance-of-the-day average peak power prices to be higher than they would have been absent GDF Suez's withholding.

45. GDF Suez knows its withholding will have the identified effect on the financial products traded on ICE and, indeed, intends that result.

46. In fact, it has been reported to Plaintiffs that Stefann Sercu – the CEO and President of GDF Suez Energy Marketing NA, Inc. of GDF Suez Energy North America, Inc. – has been observed sitting at GDF Suez's trading desk during times GDF Suez is participating in its economic withholding scheme, commenting rhetorically "did we move the forward markets"— exhibiting GDF Suez's intention to manipulate the commodities markets through its withholding scheme. Prior to his current position, Stefaan Sercu was the Vice President of Local Portfolio Management, in which he oversaw the commercial optimization of GDF Suez's North American power generation fleet.

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47. GDF Suez knows that Real Time LMP is part of virtual trades and thus it intends that its manipulation of the Real Time LMP will directly affect the values used in virtual trades.

48. GDF Suez trades in the forward markets, including on ICE. It thus has superior, material, non-public knowledge on which to base its trades. Further, GDF Suez's manipulations assure that any long positions it takes on ICE are correct and it can take assured forward hedging actions on the commodities market not available to others.

49. One reason GDF Suez is willing to forego the profit it can make selling energy in the ERCOT market at prices above its marginal costs is because it can make more elsewhere – namely, by trading with inside, superior knowledge on commodities markets like ICE. As Platts noted, GDF Suez "by increasing real-time prices, may be able to increase overall profits if their gains in the closely linked financial markets, not operated by ERCOT, more than make up for losses from selling less capacity in the real-time market." Or, as Potomac Economics stated, "Because forward prices will generally be highly correlated with spot prices, price increases in the real-time energy market can also increase a supplier's profits in the bilateral energy market . . . the withholding firm's incremental profit due to higher price is greater than the lost profit from the foregone sales of its withheld capacity."

50. In additional to the direct effect higher LMP prices have on the financial markets, the unpredictable nature of GDF Suez's actions create unforeseeable volatility in the financial markets, which separately increases prices in those markets.

## The Resulting Harm Caused by GDF Suez's Intentional Manipulation of ERCOT LMPs and the Commodities Markets

51. The times when GDF Suez will decide to artificially create scarcity through either economic or physical withholding of energy are known only to it. Thus, the markets cannot anticipate its actions and cannot contemplate its manipulation when determining prices.

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52. GDF Suez's intentional, knowing and reckless manipulation of the commodities markets has damaged Aspire and Raiden and other similarly-situated traders.

53. As noted above, the commodities markets set prices based on the disclosed expected generation. Traders then make decisions based on those prices and other information relevant to expected supply and demand. Neither the market nor traders have the ability to consider GDF Suez's undisclosed intent and decision to economically or physically withhold otherwise available energy.

54. GDF Suez's manipulation of prices in the commodities markets, through its actions within ERCOT, create artificial and unpredictable prices on ICE and directly manipulate the values in virtual trades and thus makes Aspire's and Raiden's rational trades and predictions, based on the disclosed information, incorrect, causing Aspire and Raiden to lose money or make less money that they should have if there had been no illegal manipulation from GDF Suez.

55. While ERCOT might tolerate GDF Suez's exploitation of its "small fish" exception and GDF Suez's intentional manipulation of its LMP prices for GDF Suez's gain, GDF Suez's actions violate the Commodities Exchange Act.

## **GDF SUEZ'S ECONOMIC WITHHOLDING**

56. One scheme that GDF Suez has employed is called "economic withholding." In peak hours of demand, during times of tight supply and when the LMP already exceeds GDF Suez's marginal costs of between \$25 - \$35 per MWh, GDF Suez will change its offer curve, increasing its economic offer of energy to prices well above the then-existing LMP and often at or near the \$5,000 cap. From the perspective of SCED the effect of GDF Suez's behavior is to move lower priced generation to the upper end of the supply curve, i.e. a block of GDF Suez's available megawatts was moved from lower price to (near) the maximum price. The dispatch

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software - which has an objective of minimizing the total cost of production –responds by decreasing the output of these now high priced units of GDF Suez.

57. So, in the midst of a situation where supply may not be adequate to cover demand and LMP prices already exceed GDF Suez's marginal costs, GDF Suez changes its offer curve and raises the price of its generation. At the time, GDF Suez's action is only known to it and not to other market participants. Consequently, other similar generation units could simply not foresee such a fundamental change in pricing, and are therefore unable to respond in a timely manner. Furthermore, ERCOT's prohibition on economic or physical withholding of energy by those with market power virtually assures that GDF Suez's strategy will be effective. GDF Suez knows that when LMP exceeds marginal costs, other generators will be producing at their capacity. Thus, there is not excessive capacity that can come on line quickly when GDF Suez shifts its offer curve and eliminates its production from the market.

58. By unexpectedly changing its offer curve during times of tight supply, GDF Suez prevents its energy from being dispatched, removes its generation from an already tight supply and causes ERCOT to raise the LMP in order to gain additional generation. There is no economic or physical reason for such behavior, except a desire to manipulate LMPs and commodities market prices.

59. In order to demonstrate that GDF Suez has been and is economically withholding generation resources from the ERCOT grid, several days will be highlighted as examples of GDF Suez's behavior.

#### Wednesday, July 3, 2013

60. July 3, 2013, provides an example of GDF Suez's economic withholding.

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61. Throughout the day on July 3rd, the data provided by ERCOT, which GDF Suez receives, indicated that during the time period when demand was highest for the day, there would barely be enough supply to meet that demand. In other words, ERCOT's data (based on the information it received from generators including GDF Suez) showed that scheduled/available generation would be just enough to cover its demand forecast. In such circumstances, prices could quickly rise if there were any disturbances in either forecasted generation or forecasted demand.

62. In the face of this fragile/tight situation, GDF Suez, for no economic or physical reason, responded by changing its offer curve to increase its offer price for Hour Ending 17, which is the period between 16:00-17:00. Specifically, GDF Suez changed its Energy Offer Curves to offering a substantial part of capacity of each plant at the offer cap of \$5,000. Accordingly, their generating facilities were ramped down by an aggregate of 769MW.

63. The table at Ex. 2 provides GDF Suez's real-time Energy Offer Curve data for lignite unit COLETO\_COLETOG1, as obtained from the publically available ERCOT's 60-day SCED Report. For each 15 minute interval, the Energy Offer Curve is shown in tranches from left to right. Each tranche consist of a pair of volume (MW) and price (P).<sup>14</sup>

64. As shown in Ex. 2, GDF Suez changed its Energy Offer Curves for Hour Ending 17 so that, while the offer prices for the 10th tranche remained \$20.97, the offer volume for this tranche was decreased to 449MW from 634MW. The 11th tranche shows that whereas at 15:45, GDF Suez was willing to produce 650MW for \$50, as of 16:00 GDF Suez offered 450MW but at a price of \$4,999,99. The remaining production volume of 200MW was offered in the 12<sup>th</sup>

<sup>&</sup>lt;sup>14</sup> As an example, GDF Suez has voluntarily offered this unit to generate MW8 at price P8.

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tranche, where GDF Suez indicated to be willing to generate the plant's full capacity of 650MW at a price of \$5,000.

65. GDF Suez implemented equivalent changes for HE17 for units HAYSEN\_HAYSENG1, HAYSEN\_HAYSENG3, MDANP\_CT2, MDANP\_CT3, MDANP\_CT4, MDANP\_CT5, MDANP\_CT6, and WCPP\_CC1\_4.

66. The effect of GDF Suez's actions were as follows:

Plant	MW sold in the DAM	Real Time Output as of 15:45	ne Output Real Time Output 15:45 16:00 – 17:00	
Coleto Creek	650	650	449	-201
Hays Energy	592	607	515	-92
Midlothian	1,017	1,070	855	-215
Wise County	672	655	394	-261

67. The following graph displays the output reduction by GDF Suez's generation portfolio compared to the previous and next operating days. GDF Suez produced according to their indication as expressed in the Day-Ahead Market for each day, except during the time frame 16:00-17:00 on July 3rd.



68. If a generator does not produce in the Real Time market the amount of energy it sold in the Day-Ahead Market, the generator must purchase the shortfall at the Real Time prices. On July 3, through the intentional ramping down of 769MW, GDF Suez intentionally created a short position for the company in the relevant time period since it did not generate the amount that it had contracted to sell in the Day-Ahead Market. The company voluntarily created a short position for itself during the time period when it was most likely that prices would potentially reach their highest level for the day. Moreover, the output from the plants was not unavailable during this time period; their generation had simply been re-priced out of the market.

69. The realized voluntarily and intentional LMP in \$/MWh for HB\_NORTH and the Settlement Points for GDF Suez's generation facilities reflected the effect of this re-priced generation:

Settlement Point	15:55	16:00	16:05	16:10	16:15
HB_NORTH	62.04	738.37	248.51	120	61.11

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COL_COLETOG1	71.79	781.20	289.97	120	61.14
ETCCS_CCU	81.45	823.78	333.91	120	61.11
HAYSEN_1_2	72.03	782.28	291.23	120	61.13
HAYSEN_3_4	72.03	782.28	291.23	120	61.13
MDANP_CT1_2	77.48	806.35	316.45	120	61.10
MDANP_CT3_4	76.97	804.11	314.28	120	61.10
MDANP_CT5_6	76.97	804.11	314.28	120	61.10
WCPP_CT1	72.30	783.57	294.39	120	61.11
WCPP_CT2	72.30	783.57	294.39	120	61.11
WCPP_ST1	72.30	783.57	294.39	120	61.11

70. There is no rational explanation for GDF Suez's decision to voluntarily expose itself to a potential loss of over \$3.5 million for each hour unless they stood to gain more than that amount through some other means, such as by trading on ICE or trading ERCOT virtuals.

71. Starting at 17:00, GDF SUEZ returned the offer curves to their original values, and all plants were ramped back up to their original output levels. The result was that LMPs in ERCOT dropped substantially as shown in the following table:

Settlement Point	16:55	17:00	17:05
HB_NORTH	50.59	41.09	39.78
COL_COLETOG1	55.54	41.14	39.83
ETCCS_CCU	60.38	41.08	39.78
HAYSEN_1_2	55.65	41.12	39.82
HAYSEN_3_4	55.65	41.12	39.82
MDANP_CT1_2	58.38	41.08	39.78
MDANP_CT3_4	58.12	41.08	39.78
MDANP_CT5_6	58.12	41.08	39.78
WCPP_CT1	55.77	41.08	39.78
WCPP_CT2	55.77	41.08	39.78
WCPP_ST1	55.77	41.08	39.78

72. GDF Suez's conduct on this day damaged Aspire, which took a 750MW short position into real time on July 3, 2013 and suffered resulting losses of \$57,736 and opportunity losses of \$256,000.

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73. Aspire took its short position based on known market conditions. Specifically – on July 2, 2013 – the Day-Ahead ICE futures contracts for delivery on July 3, 2013 traded at a 10.36 market heat rate vs. Waha natural gas, and the ERCOT Day-Ahead market cleared a 9.93 heat rate<sup>15</sup> vs. Waha. Additionally, ERCOT's peak load forecast at 10:00 on July 2, 2013 for July 3, 2013 was 56,005 MW. Given that the market traded at roughly a 10 heat rate, the market's expectation was that GDF Suez's assets would be online and synchronized to the grid, as all of their generating units would be producing electricity at a profit; in other words, these assets were "in-the-money."

74. Based on these fundamentals, Aspire decided to take a 750MW short position into real time on July 3, 2013. By 13:25 on July 3, 2013, Aspire had increased its short position to 3,200MW based on market indicators that there would be ample supply to meet forecasted demand.

75. At 14:48 on July 3, 2013, Aspire began stopping out of its short position, because ERCOT's indicative pricing revealed abnormal behavior. By 16:31, Aspire had stopped out of a total of 2,150MW due to the abnormal activity in both the real-time LMP and look-ahead LMP, thus realizing a loss of \$57,736.

<sup>&</sup>lt;sup>15</sup> With respect to electricity generators, "heat rate" is a term that captures how well (efficient) a power plant converts fuel into electricity. Specifically, heat rate equals the amount of energy used by a generator to create 1 kilowatt hour of electricity. Typical heat rates are 10 for coal, 11 for oil, 8 for gas, and 7-8 for combined cycle on gas.

Separately, commodities trades use the "implied heat rate," which equals the price of power divided by the price of natural gas. So if the price of electricity is \$40 and the price of gas is \$4, then the heat rate is 10, which means that the market is "trading" at about the level of a coal power plant.

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76. Had GDF Suez not changed its offer curves, the ICE BalDay futures contract would have cleared \$5 lower than it did. As such, but for GDF Suez's manipulation of the commodities market, Aspire would have stood to gain \$256,000 on its short position.

## Friday, July 12, 2013

77. July 12, 2013, provides another example of GDF Suez's economic withholding.

78. For the peak hours on July 12, 2013, Hour Ending (HE) 13 through 20, GDF Suez sold close to full capacity for each of its units in the Day-Ahead Market. As explained earlier, the results in the Day-Ahead Market serve as a forecast for the following operating day.

79. On July 12, 2013, as the table below reveals, GDF Suez's activity in the Day-Ahead market reflected its intent to run approximately 3,600MW of its generation portfolio in each HE 13-20. Market participants and those trading on ICE evaluate this information for their decision-making process.

Resource Name	Daily Max HSL	HE 13	HE 14	HE 15	HE 16	HE 17	HE 18	HE 19	HE 20
COLETO_COLETOG1	650	607	613	614	650	650	650	610	606
ETCCS_CC1_2	329	316	316	316	316	315	316	317	317
HAYSEN_HAYSENG1	214	192	191	190	190	190	191	191	193
HAYSEN_HAYSENG2	221	192	191	191	190	191	191	192	193
HAYSEN_HAYSENG3	221	197	196	196	195	196	196	197	197
HAYSEN_HAYSENG4	222	200	200	199	199	199	200	200	201
MDANP_CT1	218	194	194	194	195	195	193	193	195
MDANP_CT2	218	194	194	194	195	195	193	193	195
MDANP_CT3	229	197	197	196	199	199	197	197	195
MDANP_CT4	221	199	199	198	197	197	197	197	200
MDANP_CT5	243	208	208	207	208	207	207	207	207
MDANP_CT6	255	210	209	208	209	209	209	209	209
WCPP_CC1_4	720	647	643	641	640	680	643	643	648
Total	3,961	3,555	3,553	3,547	3,583	3,625	3,585	3,548	3,558

80. GDF Suez is committed to (financially) deliver the Day Ahead volumes of electricity at the identified node locations in the Real-Time Market. GDF Suez can fulfill this

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obligation by either producing at the generator node, or by purchasing the electricity at that location at the spot price in the Real-Time Market.

81. The following table below displays the additional Houston Hub position that GDF Suez procured in the ERCOT Day-Ahead Market during three sequential days in July 2013. According to the ERCOT conventions, the negative position indicates that GDF Suez has purchased the amount of MW as shown in the table. Thus for HE15 on July 11th, GDF Suez was a net purchaser of 70MW at HB\_HOUSTON.

Delivery Date	Settlement Point	HE 14	HE 15	HE 16	HE 17	HE 18	HE 19
7/11/2013	HB_HOUSTON	0	-70	-70	-70	-70	0
7/12/2013	HB_HOUSTON	0	-70	-5,001	-5,001	-5,001	0
7/13/2013	HB_HOUSTON	-70	-70	-70	-70	-70	-70

Note the large purchase for 3 hours on July 12th, when GDF Suez achieved a substantial net long position of over 5,000MW.

82. The table at Ex. 3 provides GDF Suez's real-time Energy Offer Curve data for unit HAYSEN\_HAYSENG1, as obtained from the ERCOT's publically available 60-day SCED Report.

83. As shown in Ex. 3, for the period HE16 to HE18 on July 12th – the exact period for which GDF Suez purchased a net 5,001MW in the Day-Ahead Market – GDF Suez changed its offer curves so that its offer prices for the 9th and 10th tranches were \$4,500 and \$4,501. In comparison, the 9th and 10th tranches were offered at \$25.66 and \$25.67 for the same tranches of output for the hours immediately before and after the period HE16 – HE18.

84. GDF Suez implemented equivalent changes for all other units, except for unit MDANP\_CT4.

85. Despite the representation in the Day-Ahead Market that these units would generate close to full capacity, the effect of re-pricing of GDF Suez's generation portfolio led to

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an aggregate output reduction of more than 800MW for the relevant hours, as can be seen in the graph below:



86. Since demand needs to be fulfilled by supply instantaneously, by definition these 800MW had to be generated by more expensive units in the aggregate supply curve of all available units on the grid, thereby raising the LMP during these 3 hours.

87. GDF Suez implemented this economic withholding on a summer day when demand was relatively high. The average hourly load for the HE17 was 63,458MW.

88. To summarize, after establishing a very large position at the Houston Hub (the net 5,001MW purchased represented nearly one-third of the Houston load), GDF Suez withheld approximately 20% of their entire generation portfolio for 3 hours with the goal to raise the LMP and generate extraordinary profits for themselves.

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89. The realized LMP in \$/MWh for HB\_NORTH, HB\_HOUSTON, and the Settlement Points for GDF Suez's generation facilities reflected the effect of this re-priced generation:

Settlement Point	15:55	16:00	16:05	16:10	16:15	16:20	16:25
HB_NORTH	49.36	50.38	50.50	77.31	52.47	47.13	47.12
HB_HOUSTON	49.40	50.41	50.53	77.33	52.50	47.17	47.16
COL_COLETOG1	49.45	50.46	50.58	77.36	52.55	47.22	47.21
ETCCS_CCU	49.36	50.37	50.50	77.31	52.46	47.13	47.12
HAYSEN_1_2	49.43	50.44	50.56	77.34	52.53	47.20	47.18
HAYSEN_3_4	49.43	50.44	50.56	77.34	52.53	47.20	47.18
MDANP_CT1_2	49.36	50.37	50.50	77.31	52.46	47.13	47.11
MDANP_CT3_4	49.36	50.37	50.50	77.31	52.46	47.13	47.11
MDANP_CT5_6	49.36	50.37	50.50	77.31	52.46	47.13	47.11
WCPP_CT1	49.36	50.38	50.50	77.31	52.47	47.13	47.12
WCPP_CT2	49.36	50.38	50.50	77.31	52.47	47.13	47.12
WCPP_ST1	49.36	50.38	50.50	77.31	52.47	47.13	47.12

90. The spike in LMP shortly after 16:00 occurred because GDF Suez's output reduction. Since the settlement of ICE HB\_NORTH futures contracts is based on the average of the ERCOT LMPs, this price spike caused by GDF Suez's economic withholding resulted in a higher clearing price for the ICE BalDay futures contract.

91. The graph below exhibits the HB\_NORTH LMP for the time frame 12:00-20:00. The transaction time and prices for the ICE HB\_NORTH BalDay futures contracts are shown on the same timeline.



92. GDF Suez's conduct on this day damaged Aspire, which held a 850MW short position into real time on July 12, 2013.

93. Aspire took its short position based on known market conditions. Specifically – on July 11, 2013 – the Day-Ahead ICE futures contracts for delivery on July 12, 2013 traded at a 12.90 heat rate vs. Waha natural gas and the ERCOT Day-Ahead Market cleared a 14.00 heat rate vs. Waha. Additionally, ERCOT's peak load forecast at 10:00 on July 11, 2013 for July 12, 2013 was 64,896 MW. Given the unusually high heat rate, the market's expectation was that GDF Suez's power generation assets would be online and dispatched because they were clearly

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"in-the-money." Aspire decided to take a 850MW short position into real time on July 12, 2013 based on these fundamentals.

94. In the end, because the market cleared at a very high heat rate, ample supply was available to serve demand, and thus GDF Suez was not able to influence the market as much as aimed for. As such, Aspire's original short position would have been profitable. Had Aspire not closed its short position early in the morning on July 12, 2013, it stood to make \$83,776 in profits.

95. Based upon GDF Suez's conduct on July 12, and on several days prior, Aspire and Raiden started limiting their day-ahead and real-time exposure going forward.

## **Tuesday, July 23, 2013**

96. GDF Suez did the same thing on July 23, 2013.

97. For the peak hours on July 23, 2013, Hour Ending (HE) 13 through 20, GDF Suez sold close to full capacity for each of its units in the Day-Ahead Market. As the table below shows, GDF Suez's activity in the Day-Ahead market reflected its intent to run close to 3,700MW of its generation portfolio in each HE 13-20.

Resource Name	Daily Max HSL	HE 13	HE 14	HE 15	HE 16	HE 17	HE 18	HE 19	HE 20
COLETO_COLETOG1	650	609	610	615	650	650	614	611	610
ETCCS_CC1_2	322	313	312	311	311	311	312	314	316
HAYSEN_HAYSENG1	219	204	204	203	203	203	204	204	205
HAYSEN_HAYSENG2	219	204	204	203	203	204	204	204	205
HAYSEN_HAYSENG3	221	210	210	209	209	210	210	210	211
HAYSEN_HAYSENG4	227	212	212	211	211	211	212	212	213
MDANP_CT1	225	209	208	207	206	206	206	207	207
MDANP_CT2	226	210	208	207	206	206	206	207	207
MDANP_CT3	231	210	208	207	206	206	206	207	207
MDANP_CT4	224	215	214	213	212	212	212	213	213
MDANP_CT5	246	224	222	221	220	220	220	221	221
MDANP_CT6	249	226	224	223	222	222	222	223	223
WCPP_CC1_4	719	643	641	639	638	637	637	637	642

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Total	3 978	3 689	3 677	3 669	3 697	3 698	3 665	3 670	3 681
TULAI	3,570	3,005	3,077	3,009	3,097	3,090	3,005	3,070	3,001

98. The table at Ex. 4 provides GDF Suez's real-time Energy Offer Curve data for COLETO\_COLETOG1, as obtained from the ERCOT's publically available 60-day SCED Report. GDF Suez implemented equivalent changes for all its other units.

99. As shown in Ex. 4, GDF Suez changed its offer curves during HE16-HE17, the time period 15:00 - 17:00, by pricing a significant portion of each unit at \$4,900/MWh and higher.

100. Despite the representation in the Day-Ahead Market that these units would generate close to full capacity, the effect of re-pricing of GDF Suez's generation portfolio led again to a significant output reduction of almost 1,100MW, as can be seen in the graph below:


101. On 7/23/2013, the immediate result at 15:00 was several high LMP prints, as ERCOT needed to call on quick-start units to compensate for the ramping down of the units of GDF Suez.

Settlement Point	14:50	14:55	15:00	15:05	15:10	15:15	15:20	15:25	15:30	15:35
HB_NORTH	44.13	49.20	822.11	826.40	831.10	62.59	120.05	66.24	57.48	46.88
COL_COLETOG1	42.44	49.29	821.83	826.40	831.05	62.64	120.00	64.13	56.29	45.42
ETCCS_CCU	43.99	49.20	822.08	826.40	831.10	62.59	120.04	66.05	57.38	46.76
HAYSEN_1_2	42.10	49.26	821.77	826.40	831.04	62.63	119.99	63.71	56.06	45.12
HAYSEN_3_4	42.10	49.26	821.77	826.40	831.04	62.63	119.99	63.71	56.06	45.12
MDANP_CT1_2	43.91	49.19	822.07	826.40	831.10	62.58	120.04	65.95	57.32	46.68
MDANP_CT3_4	43.93	49.19	822.07	826.40	831.10	62.58	120.04	65.98	57.34	46.71
MDANP_CT5_6	43.93	49.19	822.07	826.40	831.10	62.58	120.04	65.98	57.34	46.71
WCPP_CT1	46.62	49.19	822.53	826.40	831.19	62.58	120.11	69.38	59.25	49.04
WCPP_CT2	46.62	49.19	822.53	826.40	831.19	62.58	120.11	69.38	59.25	49.04
WCPP_ST1	46.62	49.19	822.53	826.40	831.19	62.58	120.11	69.38	59.25	49.04

102. The graph below exhibits the high LMP prints causing the ICE HB\_NORTH BalDay futures contract to trade up rapidly from below \$40/MWh to \$64/MWh. One LMP print of \$800 increases the average value of the ICE BalDay futures contract by about \$4/MWh. The three \$800+ LMP prints would therefore explain about half of the price increase of the ICE BalDay futures contract. The remainder was caused by the volatility introduced by the unexpected price spikes resulting from GDF Suez's economic withholding.

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103. As on July 3 and July 12, there was no rational economic reason for GDF Suez to change its offer curve, other than its intent to drive the LMPs to artificially high levels and manipulate the prices of commodities contracts on ICE and the price of ERCOT virtuals.

104. GDF Suez's conduct on this day damaged Aspire, which took a 1,950MW short position into real time on July 23, 2013 and lost out on \$526,000 that it otherwise would have made that day.

105. Aspire took its short position based on known market conditions. Specifically – on July 22, 2013 – the Day-Ahead ICE futures contracts for delivery on July 23, 2013 traded at a 11.22 market heat rate vs. Waha natural gas, and the ERCOT Day-Ahead market cleared a 10.88

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heat rate vs. Waha. Additionally, ERCOT's peak load forecast at 10:00 on July 22, 2013 for July 23, 2013 was 61,391MW, and ERCOT's peak wind forecast was 3,991MWs. Given that the market traded at roughly a 11 heat rate, the modest summertime load, and the relative high summertime wind forecast, Aspire took a 1,950MW short position into real time on July 23, 2013.

106. At 2:50pm CST on July 23, 2014, Aspire sold 50MWs of BalDay North ICE Futures at \$39, but – as depicted in the graph above – just ten minutes later, the contract had significantly increased in value due to the skyrocketing LMPs. Aspire thought that this unexplained pricing event would last only five minutes, and sold another 50MWs for \$50 at 3:02pm CST. The event lasted longer than expected, however, and due to market uncertainty, Aspire did not enter additional short positions until 3:40pm CST after conditions had moderated. Eventually, Aspire took a 2,500MW short position into the final market clear.

107. Had GDF Suez not changed its offer curves, the ICE BalDay futures contract would have cleared at \$36, compared to the realized clearing price of \$49. This translates into a settlement difference of \$10,400 for an ICE futures contract of size 50MW. As such, but for GDF Suez's manipulation of the commodities market, Aspire would have stood to gain an additional \$526,000 on its short position for the day.

## Monday, August 12, 2013

108. On this day, GDF Suez engaged in economic withholding during Hours Ending 16 and 17, again during the peak period of daily electricity demand.

109. GDF Suez again had sold every unit near full capacity in the Day-Ahead Market, indicating their intention to run approximately 3,660MW of their generation fleet during these hours.

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110. Detailed Energy Offer Curves for the time period 13:00 through 20:00 for unit HAYSEN\_HAYSENG1 are provided in the table at Ex. 5. GDF Suez implemented equivalent changes to the Energy Offer Curves for all other units, except for HAYSEN\_HAYSENG2.

111. At 14:00, the deadline at which GDF Suez had to submit the Energy Offer Curves to be used in the SCED process for 15:00, the BalDay contract's last trade on ICE was at \$51.50/MWh. Since the market opened, the ICE BalDay contract had not traded above \$60/MWh. At that point in time, only GDF Suez had the actual knowledge that it would withhold over 800MW as of 15:00.

112. As shown in the following table, at 14:10 the Look-Ahead LMPs published by ERCOT revealed the initial impact of the economic withholding by calculating the Look-Ahead LMP for 15:05 as high as \$816.81. As a result of this increase, the BalDay HB\_NORTH contract began trading higher. Within one minute after ERCOT published these Look-Ahead LMPs, the BalDay contract had traded up to \$65/MWh.

Look-Ahead Minutes	Time = 14:10	Time = 14:40	Time = 14:50	Time = 15:00
5	45.21	56.14	75.03	888.84
10	45.17	46.35	48.65	1,000.00
15	45.31	47.76	493.42	3,500.00
20	45.30	47.93	178.76	4,000.00
25	46.79	125.37	816.81	4,900.00
30	47.93	125.37	817.12	4,900.00
35	48.30	124.02	888.33	4,900.00
40	48.71	816.81	890.21	4,900.00
45	49.64	817.12	900.16	4,900.00
50	49.09	888.33	924.11	4,900.00
55	816.81	888.84	3000.00	4,900.01

113. Subsequently, the Look-Ahead LMPs published at 14:40 showed several intervals at elevated prices above \$800 causing the BalDay HB\_NORTH contract to trade higher to

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\$80/MWh. When the Look-Ahead LMPs published at 14:50 showed a further increase to \$3,000 for the future time of 15:45 the BalDay HB\_NORTH contract traded through \$90/MWh.

114. Finally, at 15:00, which was the beginning of the period when GDF Suez repriced a significant portion of their generation portfolio at \$4,900 and higher, the actual LMP spiked to \$888.84 while the Look-Ahead LMPs published at that time indicated GDF Suez would be the marginal generator setting the clearing price for a duration of at least 35 minutes<sup>16</sup>. Shortly after publication of this data, the price of the BalDay HB\_NORTH contract followed the expected price path given by the Look-Ahead locational marginal prices and traded up to \$130/MWh.

115. The impact of the economic withholding by GDF Suez is clearly visible in the following graph, representing the market as of 15:01.

<sup>&</sup>lt;sup>16</sup> This is true because the LMP is equal to the \$4900/MWh offer price of GDF Suez and no other generator offer was at this price.

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116. GDF Suez's conduct on this day damaged Aspire, which took a 1,050 MW short position into real time on August 12, 2013 and suffered resulting losses of \$111,640.

117. Aspire took its short position based on known market conditions. Specifically – on August 9, 2013 – the Day-Ahead ICE futures contracts for delivery on August 12, 2013 traded at a 12.4 heat rate vs. Waha natural gas and the ERCOT Day-Ahead Market cleared an 11.97 heat rate vs. Waha. Additionally, ERCOT's peak load forecast at 10:00 on August 11, 2013 for August 12, 2013 was 62,418 MW. The market also traded in the 12 heat rate range, which historically commits most of ERCOT's available peaking units. Fundamentally speaking, Aspire felt this was a high enough heat rate to supply ERCOT's modest August demand, and decided to take a 1,050 MW short position into real time on August 12, 2013.

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118. On August 12, 2013, as depicted in the chart above, Aspire observed the market drifting higher throughout the day. Aspire then noticed, as depicted above, ERCOT's Look-Ahead LMP spiking to and remaining at abnormally high levels, indicating that ERCOT would exhaust its available capacity leading to the scarcity pricing levels.

119. Due to rapidly-changing market conditions, Aspire was not able to pare down positions in anticipation of this event because the market was illiquid and hypersensitive because of GDF Suez's manipulation. At 15:15, real time LMP prices had fallen to \$57.36, causing the ICE BalDay HB\_NORTH futures contract to trade down. At this time, Aspire reduced positions due to market uncertainty, stopping out of 400MW and realizing \$111,640 in losses.

120. Had Aspire stopped out just 15 minutes earlier, it would have suffered losses close to \$1,000,000, based on an average cost of \$58 to close the remaining 850MW open futures contract position.

121. One full hour of LMPs at scarcity pricing increases the average value of the ICE BalDay futures contract by about \$300/MWh. Besides the increase in price, the situation would be aggravated as offers are pulled off the ICE exchange and the market ceases to function rationally and properly. That potential situation of GDF Suez accomplishing its goal to push the LMPs to \$4,900 for several intervals, could have easily lost Aspire \$5,000,000 on its 1,050MW position.

122. Had GDF Suez not changed its offer curves, the ICE BalDay futures contract would have cleared approximately \$7 lower. As such, but for GDF Suez's manipulation of the commodities market, Aspire would have stood to gain an additional \$95,200 on its short position for the day.

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123. In response to this event, Aspire continued to restrict position sizing in the days and months following, because, as a result of the manipulation of GDF Suez, the lack of clarity band lack of transparency in the market.

## Tuesday, September 3, 2013

124. On this day, GDF Suez engaged in economic withholding during Hours Ending 17 and 18, adhering to the same withholding strategy during the peak period of daily electricity demand.

125. In the Day-Ahead Market GDF Suez again had sold each unit near full capacity, except for unit HAYSEN\_HAYSENG2, indicating their intent to run at least 3,470MW of their generation fleet.

126. Detailed Energy Offer Curves for the period 13:00 through 20:00 for the unit HAYSEN\_HAYSENG4 are provided in the table at Ex. 6. GDF Suez implemented equivalent changes to the Energy Offer Curves for units ETCCS\_CC1\_2, HAYSEN\_HAYSENG1, HAYSEN\_HAYSENG3, MDANP\_CT4, MDANP\_CT5, MDANP\_CT6, and WCPP\_CC1\_4.

127. The unit MDANP\_CT1, for which the Energy Offer Curves were not significantly changed so as to economically withhold the unit, experienced a forced outage at 14:15, thereby removing about 215MW of generation. This unit remained off-line for 3 hours until production was restarted at full capacity around 17:15-17:30.

128. About another 100MW of generation output was removed by GDF Suez during time interval 14:30-15:00 by temporarily lowering the High Sustainable Limit (HSL) of unit COLETO\_COLETOG1 from 645MW at 14:00 to 535MW at 14:15. Generation output by this unit decreased from 628MW to 531MW. At 15:00 the HSL was returned to the value of 650MW and production by this unit ramped back up.

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129. Coinciding with the withholding activities by GDF Suez was a forced outage at the Jack County generating facility (1,230MW total capacity). The forced outage occurred in two stages with 615MW becoming unavailable between 15:15 and 15:30 and another 615MW between 16:15 and 16:30. The outage, in isolation, necessarily put upward pressure on LMPs because ERCOT was forced to replace the lost production with higher cost generation.

130. As a result of GDF Suez's scheme, the SCED optimization at the start of HE17 initially ramped down the GDF Suez's units – due to the fact that their re-priced power was more expensive than the clearing price. At 16:15, generation output had been reduced by approximately 500MW, as can be seen in the graph below:



131. As HE17 progressed, load increased and the re-priced units of GDF Suez became the marginal generator and were dispatched to generate electricity at their offer price of \$4,900, which then set the Locational Marginal Price.

									·	,
Settlement	15.55	16.00	16.05	16.10	16.15	16.20	16:25 _	16.45	16.50	16.55
Point	15.55	10.00	10.05	10.10	10.15	10.20	16:40	10.45	10.50	10.55
HB_NORTH	65.46	365.03	68.55	159.76	880.22	387.82	4900	4000	923.67	890.13
COL_COLETOG1	65.52	365.76	68.63	163.18	880.24	388.56	4900	4000	923.70	890.16
ETCCS_CCU	65.45	364.99	68.55	159.44	880.22	387.79	4900	4000	923.67	890.13
HAYSEN_1_2	65.51	365.62	68.61	162.44	880.23	388.42	4900	4000	923.70	890.16
HAYSEN_3_4	65.51	365.62	68.61	162.44	880.23	388.42	4900	4000	923.70	890.16
MDANP_CT1_2	65.45	364.95	68.55	158.99	880.22	387.75	4900	4000	923.64	890.10
MDANP_CT3_4	65.45	364.99	68.55	159.29	880.22	387.75	4900	4000	923.64	890.10
MDANP_CT5_6	65.45	364.99	68.55	159.29	880.22	387.75	4900	4000	923.64	890.10
WCPP_CT1	65.46	365.02	68.55	161.16	880.22	387.82	4900	4000	923.75	890.22
WCPP_CT2	65.46	365.02	68.55	161.16	880.22	387.82	4900	4000	923.75	890.22
WCPP_ST1	65.46	365.02	68.55	161.16	880.22	387.82	4900	4000	923.75	890.22

132. The LMP for HB\_NORTH and various Settlement Points for units of GDF Suez during 15:55-16:55 are shown in the table below:

133. The graph below shows the LMP for HB\_NORTH during 7:00-20:00 with the trading activity of the corresponding BalDay futures contract on the same timeline:

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134. The effect of the re-pricing was to change the aggregate ERCOT electricity supply curve. From the generation offer data provided by ERCOT in the 60-day SCED Report, the supply curve can be constructed and is shown in the following graph.

135. The graph shows the actual supply and demand curves for 16:30, at which time the actual clearing price was \$4,900.

136. Had GDF Suez not re-priced their production, then the supply curve would have followed the dotted line in the graph, i.e., the observable "step" that occurred at an output of approximately 63,400MW would have shifted to the right by 473MW.

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137. Absent any economic withholding from GDF Suez, prices would have been substantially lower as shown in the table below:

Time	Actual LMP HB_NORTH	Simulated LMP
16:05	68.55	68.55
16:10	159.76	159.76
16:15	880.22	880.22
16:20	387.82	387.82
16:25	4,900.00	901.00
16:30	4,900.00	901.00
16:35	4,900.00	901.00
16:40	4,900.00	901.00
16:45	4,000.00	901.00
16:50	923.67	901.00
16:55	890.13	890.13
17:00	901.15	901.00
Average for HE 17	2,317.61	724.46

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138. For GDF Suez – and all other generators actually producing during this time period – the effect of a \$4900 dispatch price for 4 periods caused the hourly LMP to settle at \$2,317.61 as compared to approximately \$724 which is what the price would have been absent any withholding by GDF Suez.

139. During this HE 17 alone, any market participant who bought/sold power in the real time market paid/received an "extra" \$1,593.15 per megawatt as a result of GDF Suez exercising market power.

140. Withholding by GDF Suez also had an impact on HE 16 and extending the above analysis to evaluate both hours, the average clearing price for the HB\_NORTH PeakWD futures contract is estimated to have been \$93 MWh, as opposed to the realized \$199/MWh. For an ICE futures contract of size 50MW, this translates into settlement difference of \$84,800.

141. For 9/3/2013, Raiden had sold 350MW in the Day-Ahead Market of Settlement Point HB\_NORTH for the manipulated hours HE16-17. Based on the analysis above, GDF Suez's economic withholding caused Raiden to suffer losses in the amount of \$592,388.

#### August 23, 2013

142. GDF Suez also economically withheld generation on August 23, 2013. That day, Aspire took a 250MW short position into real time due to a heat rate of about 11 in the day ahead markets, and a peak load forecast from ERCOT of 60,755MWs. During the trading day, Aspire had increased its short position to 3,850MWs, but at 2:54pm CST, the look ahead prices started spiking, and Aspire began initiating stop outs. At 3:00pm CST, ERCOT North LMP ticked to \$823.47, and the look ahead prices showed \$3,500 prices by 3:55pm CST. Aspire stopped out of 700MWs at a weighted average price of \$58.18, suffering stop out losses of \$70,432.

Additionally, had GDF Suez not economically withheld production, the BalDay ICE futures

contract would have cleared \$41.89, meaning that Aspire would have gained \$610,240, based on

its open position as of 2:20pm CST.

# Industry Recognition of GDF Suez's Economic Withholding

143. The industry periodical, Platts Megawatt Daily, has identified GDF Suez's

economic withholding and its effect on the LMP. It found:

A Platts analysis of generation offer curves over nine separate days [in the summer of 2013] shows that on each of these days, GDF Suez raised the price on about 564 to 1,332 MW of electricity, across ERCOT, to between \$4,900 and \$5,000/MWh, which is the system-wide offer cap. These price hikes were during the late afternoon typically between 4 and 5 p.m. and lasted at least an hour.

\*\*\*

In the hour before the GDF Suez generators collectively hiked their prices to near the system-wide offer cap, system-wide real time clearing prices ranges between \$42.69 and \$107.96.

In the periods during which between 564 and 1,332 MW of GDF Suez power was offered near the system-wide cap, system wide real-time clearing prices ranged between \$45.52 and \$4,900.

One of those days was September 3, when real-time power prices across ERCOT rose from about \$50/MWh to about \$4,900/MWh, which ERCOT said occurred because a 609-MW plant tripped off-line at about 4:45 p.m. But beginning at 4 p.m. and continuing to 5:45 p.m. on that date, GDF Suez raised the price on 564 MW of its generation to between \$4,900 and \$5,000/MWh.

During the nine days when GDF Suez engaged in similar pricing, in the hour after these generators collectively returned their prices to near the market-clearing price, system-wide real time clearing prices ranged between \$39.80 and \$81.89.

144. Potomac Economics, ERCOT's independent market monitor, has agreed that

GDF Suez's re-pricing of its offer curve is "economic withholding" of its energy generation.

145. The above examples of GDF Suez's economic withholding are just that -

examples of one scheme GDF Suez regularly employs to manipulate the LMPs in the ERCOT

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Real Time market and the ICE market. Given the amount of data involved and Plaintiff's inability to receive such information until long after the events have occurred, Plaintiffs cannot, at this time, possibly identify all instances of GDF Suez's economic withholding or its consequences.

# **GDF Suez's Physical Withholding Creates Artificially High Prices**

146. GDF Suez also manipulates LMP prices, ICE contract prices and ERCOT virtual prices by improperly removing its generation units from the grid. Without any physical reason for doing so, GDF Suez designates units capable of running as either "OFF" or "EMR" to ERCOT, either of which removes the unit from ERCOT's consideration of the available generation.

147. GDF Suez's improper use of the OFF or EMR designations is not related to any physical need to have its units removed from generation. Rather, GDF Suez manipulates these designations to artificially limit the supply of electricity to the ERCOT system, thus creating scarcity in order to artificially drive the LMP up and thus artificially manipulate ICE contract prices and ERCOT virtual prices.

#### **GDF SUEZ'S PHYSICAL WITHHOLDING**

148. In order to demonstrate that GDF Suez has been and is physically withholding generation resources from the ERCOT grid, several days will be highlighted as examples of GDF Suez's behavior. Before describing those instances, the physical capabilities of the units GDF Suez withholds will be discussed.

#### **Characteristics of Hays Energy and Midlothian**

149. Hays Energy is a power plant in Hays County, Texas, that started commercial operation in April 2002. The 1,100 MW gas-fired power plant is a fully standardized combined-

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cycle reference plant design by Alstom (model KA24-1 ICS), consisting of four 'power trains' that each have the 'one-on-one' configuration of one gas turbine in series with its Heat Recovery Steam Generator (HRSG) coupled to one steam turbine.

150. Midlothian is also a combined-cycle power plant, located in the town of Midlothian in Ellis County, Texas. It was ordered in 1998 and the last units started commercial operation in December 2001. This 1,650MW gas-fired power plant was constructed by ABB, which merged with Alstom in 1999. Effectively of the same design as Hays Energy, Midlothian consists of six power trains of the one-on-one configuration.

151. The gas turbines used in both Hays Energy and Midlothian are Alstom model GT24. According to a marketing brochure for the GT24 and GT26 gas turbines:

Alstom's gas turbines stand out for their high cost efficiency, availability and flexibility. The range covers a wide spectrum of products, including machines for both the 50 Hz and 60 Hz markets. They can operate either in simple cycle or combined cycle and are fueled by natural gas, medium or low calorific gases or light oil; with on-line fuel switch over capability eliminating dependency on any one fuel.

The term 'Combined-Cycle' refers to the coupling of a gas turbine to a steam turbine. In this assembly, the gas-fired turbine's exhaust heat is used to create steam that drives the steam turbine, thereby improving generation efficiency compared to the 'Simple Cycle' operation (gas turbine only).

152. Market conditions permitting, Hays Energy and Midlothian can be started and generating power within a very short time frame if operated as Simple-Cycle power plants, as described in a 2005 article in the publication Power Engineering International (Pei):

The GT24/GT26 has been shown to reach combined cycle full load within 50 minutes, while the simple cycle plant can start up in around half an hour. This short

start-up time allows revenues to be realized almost immediately after the decision to start up the power plant. It allows the operator to optimally adapt to market changes and to take opportunities with minimal time delay.

Most often, however, these power plants will be operated in Combined-Cycle mode. While requiring a somewhat longer start-up time, these units still have the flexibility to start up fast and be generating at full capacity to take advantage of favorable market conditions. According to the May-June 2002 issue of Turbomachinery International:

From start-up to full load on a warm start after an overnight shutdown has taken less than an hour. On a completely cold start, as after a maintenance outage, the steam turbine is also starting from rest and requires steam for gland sealing and condenser evacuation. This can only come from the HRSG and thus adds to the starting time as the steam turbine is gradually warmed up to start loading. In these circumstances, start-up takes about 105 minutes to full load.

153. The Environmental Protection Agency (EPA) collects plant specific data in order to monitor emissions. These data, which are available publically, contain details on hourly operation performance and can be used to calculate an estimate of each unit's Heat Rate. The Heat Rate (in MMBtu/MWh) is a conversion factor of how efficiently a generation unit converts its fuel into electrical energy. A lower Heat Rate means the unit is more efficient. Based on the EPA data, the Heat Rate for Hays Energy and Midlothian are approximately 7.2 and 7.5 MMBtu/MWh, respectively. This confirms that these power plants are highly efficient.

154. According to a press release of July 2013, Alstom was awarded a contract for the service and upgrade package for Hays Energy and Midlothian. The upgrade implements the latest technological advances to provide improved flexibility, and maximize the combined-cycle output by over 9MW during times of peak demand. The upgrade was thus an incremental improvement for these power plants that already operated at high availability and high efficiency, produce low emissions, and offered fast start-up times.

# **Resource Status OFF and EMR**

155. GDF Suez intentionally and artificially excludes its generation units from the grid by designating their Resource Status as either "OFF" or "EMR." Either designation removes the unit from ERCOT's consideration of the available generation.

156. "Resource Status" is a required component of the Current Operating Plan ("COP"), which reflects the anticipated operating conditions for a resource for each hour in the next seven operating days.

157. ERCOT Protocol section 3.9 requires each Qualified Scheduling Entity ("QSE") representing generation resources, such as GDF Suez, to submit a COP for each resource and update the COP no later than 60 minutes after an event that caused a change. Only the QSE knows the current Resource Status on the units they represent. This information is not available to other market participants.

158. Both statuses OFF and EMR keep the generation unit off the grid in normal conditions. The official descriptions are provided in ERCOT protocol section 3.9.1(5)(b)(ii):

- (C) OFF Off-Line but available for commitment in the Day-Ahead Market (DAM) and RUC; and
- (D) EMR Available for commitment only for ERCOT-declared Emergency Condition events; the QSE may appropriately set LSL and HSL to reflect operating limits

159. ERCOT's Business Practice Manual "Current Operating Plan Practices by Qualified Scheduling Entities," describes expectations regarding Resource Status OFF:

Use OFF for a Resource that is available (or is expected to be available by the QSE in a forward COP hour) but that the QSE is not planning for the Resource to be On-Line.

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160. The Business Practice Manual also describes expectations regarding Resource

# Status EMR:

EMR is an expected Resource Status to indicate:

- 1) the Resource is available but expected to be Off-Line; and
- 2) upon an ERCOT declaration of emergency, the Resource is capable of being connected to the ERCOT Transmission Grid.

EMR is one of the Off-Line Resource Status Codes; however, Generation Resources assigned this Status Code are not provided as an available resource for use by the RUC application. ERCOT Operations manages the commitment of EMR Resources manually. The QSE is expected to submit either an Energy Offer Curve or Output Schedule for those COP reporting hours showing an EMR status.

161. Finally, the Business Practice Manual clarifies the type of units for which the

EMR status was designed:

Examples of Resources that may use this Resource Status includes:

- a) Hydro facilities that can operate around water limiting conditions for some period of time.
- b) Facilities that have fully exhausted environmental emissions limits but could operate under a regulatory exemption.

162. Evaluating the 60 Day SCED reports going back to July 2011 reveals the type of units that have frequently been designated EMR over the course of the past 3 years. These data reveal four main categories: 1) hydro facilities, 2) aging oil and gas peaking power plants that have been in service since as far back as 1970, 3) 'behind-the-fence' industrial generation facilities, and 4) GDF Suez with Hays Energy units 1 through 4 and Midlothian units 1 through 6.

163. Considering the characteristics of Hays Energy and Midlothian (gas-fired, quickstart-up, efficient, low emissions), it is clear that GDF Suez abuses the purpose of the EMR

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designation in order to exclude, at will, economically viable generation units from the ERCOT grid, while at the same time making them unavailable for ERCOT's reliability considerations in order to manipulate market prices.

164. Also shown in ERCOT's 60 Day SCED reports is that each of the units of Hays Energy and Midlothian have been operating on a regular basis over the past few years. The EPA data exhibited that these units have been efficiently producing electricity. Thus, GDF Suez's use of the OFF or EMR designations is not related to any physical need to have its units removed from generation, but from an incentive to artificially limit the supply of electricity to the ERCOT system and artificially create scarcity in order to artificially drive up the LMP.

165. To determine whether GDF Suez is physically withholding, first and foremost the economic viability of their generation units need to be evaluated. Typically, if the generation cost of a unit is lower than the prevailing market price, the unit would be producing electricity at a profit and the unit is considered "in-the-money."

166. With the estimated Heat Rate obtained from the EPA data, the generation cost (in \$/MWh) can be calculated by multiplication with the fuel price (in \$/MMBtu). Hays Energy and Midlothian are assumed to burn natural gas priced at location 'Waha'. Since price differentials between gas locations in Texas are very small most of the time, the outcome will not be impacted significantly by selecting a different gas location. To account for gas transportation costs, the gas price used in this approximation has been increased by a fixed amount of \$0.05/MMBtu.

167. The estimated generation cost for certain days are shown in the table below. These appear to be conservative (high) estimates since the actual marginal generation cost as submitted by GDF Suez in the initial tranches of the voluntary DAM and SCED energy offer curves were significantly lower on these days.

	Approximate Generation Cost (\$/MWh)										
Facility	10/1/13	11/22/13	1/6/14	2/10/14	3/3/14	3/4/14					
Hays Energy	25.1	26.5	31.8	47.7	35.2	58.0					
Midlothian	26.1	27.6	33.2	49.7	36.7	60.5					

# **Physical Withholding**

168. Before describing detailed cases of physical withholding on certain recent days, it is worthwhile to mention that, while being "in-the-money," GDF Suez has been withholding units of Hays Energy and Midlothian from the Day-Ahead Market and Real Time Market consistently and on a regular basis during 2012 and 2013.

# Tuesday, October 1, 2013

169. The Day-Ahead Market average price for the 16 hour peak period HE7-22 cleared for Hays Energy: \$41.80/MWh for HAYSEN1\_2 and HAYSEN\_3\_4, and for Midlothian: \$33.55/MWh for MDANP\_CT1\_2, and \$33.68/MWh for both MDANP\_CT3\_4 and MDANP\_CT5\_6. These clearing prices specific to the power plant locations are significantly above the generation costs conservatively calculated above. In other words, all units were "in-the-money" and would have operated at a profit if their output was sold at then-market prices.

170. At 6:26:38 CST ERCOT issued an Operating Condition Notice ("OCN") to the market stating "ERCOT is issuing a projected Reserve Capacity shortage for Hours Ending 15:00 through 18:00."

171. An OCN is the first of four levels of communication issued by ERCOT in anticipation of a possible Emergency Condition. According to ERCOT Protocol section 6.5.9.3.1:

ERCOT will issue an Operating Condition Notice (OCN) to inform all QSEs of a possible future need for more Resources due to conditions that could affect ERCOT System reliability. OCNs are for informational purposes only, and ERCOT

exercises no additional operational authority with the issuance of this type of notice, but may solicit additional information from QSEs in order to determine whether the issuance of an Advisory, Watch, or Emergency Notice is warranted. The OCN is the first of four levels of communication issued by ERCOT in anticipation of a possible Emergency Condition.

172. The HB\_NORTH location had cleared \$33.43/MWh for HE7-22 in the Day-Ahead Market. The ICE futures contract for HB\_NORTH opened trading at \$48. It moved higher to \$55 after ERCOT issued its OCN, as would be rationally expected.

173. Despite the price signals significantly above GDF Suez's generation costs and in the face of ERCOT's notice regarding supply shortage and grid reliability, GDF Suez physically withheld generation from several units, as shown in the table below, displaying the Resource Status for Hays Energy and Midlothian.

Resource Name	HE7-HE12	HE13-14	HE15	HE16-19	HE20-22
HAYSEN_HAYSENG1	ON	ON	ON	ON	ON
HAYSEN_HAYSENG2	EMR	EMR	EMR	EMR	EMR
HAYSEN_HAYSENG3	EMR	EMR	EMR	EMR	EMR
HAYSEN_HAYSENG4	ON	ON	ON	ON	ON
MDANP_CT1	OFF	STARTUP	ONRUC	ONRUC	ONRUC
MDANP_CT2	OFF	STARTUP	ONRUC	ONRUC	ONRUC
MDANP_CT3	OFF	OFF	OFF	OFF	OFF
MDANP_CT4	EMR	EMR	EMR	STARTUP	ON
MDANP_CT5	ON	ON	ON	ON	ON
MDANP_CT6	ON	ON	ON	ON	ON

174. ERCOT's Hourly Reliability Unit Commitment ("HRUC") process forced online Midlothian units 1 and 2 for the afternoon. These units generated at their Low Sustainable Limit ("LSL"), which is 150MW in this case. As ERCOT Protocols require, the remainder of their capacity between LSL and HSL (from 150MW to approximately 220MW for each Midlothian unit) is priced at the offer cap. Thus, these two units placed a total of 140MW in the grid at a price of \$5,000/MWh. The units designated as OFF or EMR did not produce anything despite

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GDF Suez's ability to sell energy generated from those units at a significant profit. GDF Suez's actions were thus not economically rational in the ERCOT market.

175. But, the events that followed caused the term futures contract for summer (Jul-Aug) 2014 to move higher by about 65 Heat Rate ticks. The last trade on ICE executed on 9/30/2013 was a heat rate of 19.85 (Firm-LD Peak, LD1 for Phys). The next day, on 10/1/2013, following the ICE BalDay futures contract moving higher, several transactions moved the price up to a heat rate of 20.50.

176. On a mark-to-market basis, GDF Suez's 4,000MW generation portfolio therefore increased in value by approximately \$7M on this contract alone. Other contracts followed suit and also rallied higher, such as for June 2014 and summer 2015 adding to the mark-to-market valuation. The impact of GDF Suez's physical withholding created an opportune moment to sell forward power at increased prices.

177. Aspire was short 500MW of the Ice futures contracts for July and August 2014, and as such, had mark-to-market losses in the amount of approximately \$1M.

178. The realized hourly LMP averages in \$/MWh for the afternoon peak are shown in the table below:

Settlement Point	HE12	HE13	HE14	HE15	HE16	HE17	HE18	HE19
HB_NORTH	35.95	43.23	98.04	363.43	1030.15	1094.73	137.37	45.87
HAYSEN_1_2	36.15	43.42	99.14	375.47	1110.68	1184.58	154.79	49.06
HAYSEN_3_4	36.15	43.42	99.14	375.47	1110.68	1184.58	154.79	49.06
MDANP_CT1_2	35.95	43.23	98.02	363.45	1084.69	1168.58	150.11	45.84
MDANP_CT3_4	35.95	43.23	98.02	363.54	1085.31	1169.25	150.22	45.82
MDANP_CT5_6	35.95	43.23	98.02	363.54	1085.31	1169.25	150.22	45.82

179. The graph below shows the LMP for HB\_NORTH started spiking and moving higher as of 13:00, while the corresponding ICE futures contract traded ever higher in response.

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180. Only at 15:00, after the ICE futures contract had reached around \$100, Midlothian unit 4 initiated startup. This was too late for any relief to the reserve capacity shortage, as the earliest this unit could be at full capacity with a 'cold start' would be around 16:45. In reality, the startup lasted unusually long and Midlothian unit 4 did not come online at full capacity until 19:45. Effectively, GDF Suez withheld this unit throughout the event.

181. Eventually, the average LMP for HB\_NORTH for the peak period HE7-22 cleared \$196/MWh. Though congestion impacted the individual nodes, the average LMP for Hays Energy and Midlothian cleared similarly, specifically \$209/MWh for HAYSEN1\_2 and HAYSEN3\_4, and \$205/MWh for MDANP\_CT1\_2, MDANP\_CT3\_4, and MDANP\_CT5\_6.

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# 182. The graph shows the actual supply curve for HE16 and the range of the demand curve during HE16.



183. Had GDF Suez ran the six "in-the-money" units that were physically withheld, the supply curve would have followed the dotted line in the graph. With the shift to the right, the individual LMP prints would have remained significantly lower as the dotted supply line meets demand at prices no higher than approximately \$152/MWh during HE16, and \$153/MWh at peak demand during HE17, as a similar analysis for HE17 showed.

184. Absent any physical withholding by GDF Suez, based on the above supply/demand analysis, the average clearing price is estimated to have been approximately \$46/MWh. Compared to the realized \$196/MWh, this translates into a settlement difference of \$120,000 for an ICE futures contract of size 50MW.

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185. October 1, 2013 was extraordinary hot, ranking as the 9<sup>th</sup> hottest October day in the past 10 years and the 12<sup>th</sup> hottest October day of all time—thus explaining the high demand for electricity. Actual high temperatures were 90 degrees in Dallas, 93 degrees in San Antonio, and 88 degrees in Houston. GDF Suez, however, knew this demand was coming. The high temperatures were forecasted a week in advance, with the weather forecast on September 30, 2013 confirming that October 1, 2013 would be extraordinary warm. GDF Suez knew that demand for electricity would be high on October 1, 2013, and acted accordingly.

186. GDF Suez's conduct on this day damaged Aspire, which took a 500MW short position into real time on October 1, 2013, but increased its short position throughout the day by an additional 1,250 MW, thus suffering losses of \$4,347,448.

187. Aspire entered its short position based on known market conditions. Specifically – on September 30, 2013 – the Day-Ahead ICE futures contracts for delivery on October 1, 2013 traded at a 9.90 heat rate vs. Waha natural gas and the ERCOT Day-Ahead market cleared a 9.75 heat rate vs. Waha. Additionally, ERCOT's peak load forecast at 10:00 on September 30, 2013 for October 1, 2013 was 49,853MW, and ERCOT's peak wind forecast was 2,051MW. Given that the market traded in the 10 heat rate range, which historically commits most of ERCOT's available units, Aspire felt there was ample supply to meet demand based on fundamentals. As such, Aspire decided to take a 500MW short position into real time on October 1, 2013 (because of GDF Suez's conduct throughout the summer, Aspire at this point only took small positions on any given day).

188. At the beginning of the trading day on October 1, 2013, ERCOT revised its load forecast for HE17 to 53,210 and issued the OCN described above. However at 8:00, ERCOT's Short-Term System Adequacy report indicated an approximate addition of 1,000 MW of

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generation to meet demand. As such, at 9:08, Aspire increased its short position by 250MW at prices between \$42 and \$45 (or a 12.25-13.12 heat rate vs. Waha gas—a heat rate that indicates GDF Suez's entire available generation fleet should be dispatched). At 11:00, ERCOT's Short-Term System Adequacy report indicated another 1,000 MW of generation would become available on the grid to meet demand. As such, Aspire increased its short position by another 1,050 MW at prices between \$43 and \$90 (or a 12.53-26.24 heat rate vs. Waha Gas).

189. As described above, however, GDF Suez kept its generating facilities off-line, thus manipulating the HB\_NORTH ICE BalDay futures contract price higher. Given its short position – based on the above analysis – Aspire suffered losses in the amount of \$4,347,448.

## Friday, November 22, 2013

190. For this day, the Day-Ahead Market average price for the 16 hour peak period HE7-22 cleared for Hays Energy: \$31.47/MWh for HAYSEN1\_2 and HAYSEN\_3\_4, and for Midlothian: \$29.64/MWh for MDANP\_CT1\_2, and \$29.68/MWh for both MDANP\_CT3\_4 and MDANP\_CT5\_6.

191. GDF Suez submitted Energy Offer Curves to the Day-Ahead Market with units of Hays Energy offered at full capacity for \$23.83/MWh, and units of Midlothian offered at full capacity for \$24.09/MWh. Thus, both Hays Energy and Midlothian were "in-the-money" and would have been dispatched by ERCOT were it not for GDF Suez's subsequent intentional withholding.

192. During the operating day, GDF Suez submitted Energy Offer Curves with the majority of capacity offered for around \$25/MWh for units of Hays Energy and \$25-26/MWh for units of Midlothian. In the Real Time Market, despite the fact that Hays Energy and Midlothian

would be producing electricity at a profit, GDF Suez opted to physically withhold capacity from the grid as detailed in the following table.

Resource Name	HE7	HE8	HE9	HE10-22
HAYSEN_HAYSENG1	ON	ON	ON	ON
HAYSEN_HAYSENG2	EMR	EMR	EMR	EMR
HAYSEN_HAYSENG3	EMR	EMR	EMR	EMR
HAYSEN_HAYSENG4	ON	ON	ON	ON
MDANP_CT1	OUT	OUT	OUT	OUT
MDANP_CT2	OFF	OFF	STARTUP	ON
MDANP_CT3	OFF	STARTUP	STARTUP	ON
MDANP_CT4	OFF	OFF	OFF	OFF
MDANP_CT5	ON	ON	ON	ON
MDANP_CT6	ON	ON	ON	ON

193. GDF Suez demonstrated the start-up time for a 'cold start' of Midlothian units can be as short as 90-120 minutes. Midlothian unit 2 initiated its start-up sequence at 8:15 and was operating near full capacity in 90 minutes at 9:45. Midlothian unit 3 initiated its start-up sequence at 7:15 and was operating near full capacity at 9:15.

194. The daily cycle of power consumption at this time of the year is characterized by a double peak, one in the morning typically during HE7-9 (mostly caused by heating demand) and another demand peak during the evening, typically during HE18-19. Sophisticated market participants like GDF Suez are aware of the steep increase in morning demand. Flexible power plants like Hays Energy and Midlothian are uniquely positioned to take advantage of these rapid changes in demand as their design allows them to be ramped up and down fast.

195. The realized hourly LMP averages in \$/MWh for the morning and evening peak are shown in the table below:

Settlement Point	HE7	HE8	HE9	HE10	HE17	HE18	HE19	HE20
HB_NORTH	60.14	147.95	171.52	26.92	77.03	838.78	108.27	81.14
HAYSEN_1_2	60.14	147.95	169.88	26.38	44.36	759.88	38.94	37.14
HAYSEN_3_4	60.14	147.95	169.88	26.38	44.36	759.88	38.94	37.14

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MDANP_CT1_2	60.14	147.95	171.38	26.87	72.88	828.53	99.60	75.61
MDANP_CT3_4	60.14	147.95	171.61	26.95	75.53	835.45	105.06	79.08
MDANP_CT5_6	60.14	147.95	171.61	26.95	75.53	835.45	105.06	79.08

196. The graph below shows the LMP for HB\_NORTH and transactions for the BalDay ICE contract on the same timeline.



197. By physically withholding Midlothian units 2 and 3 during the morning ramp and bringing these units online as of HE10 when the scarcity situation had subsided, GDF Suez caused LMPs to spike during HE7-9, which led the ICE futures to move higher.

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198. The physical withholding of Hays Energy unit 2 and 3, and Midlothian unit 4 throughout the day had an impact both on the morning and evening scarcity events, leading LMPs to spike and subsequently the ICE futures to move higher.

199. The average LMP for HB\_NORTH for the peak period HE7-22 eventually cleared \$111/MWh. Congestion on this day mostly impacted the nodes for Hays Energy, lowering the average clearing price somewhat. The average LMP cleared \$96.5/MWh for HAYSEN1\_2 and HAYSEN3\_4, and \$109/MWh for MDANP\_CT1\_2, and \$110/MWh for MDANP\_CT3\_4, and MDANP\_CT5\_6.

200. The graph shows the actual supply curve for HE18 and the range of the demand curve during HE18.



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201. Had GDF Suez ran their "in-the-money" units that were physically withheld, the supply curve would have followed the dotted line in the graph. With the shift to the right, the individual LMP prints would have remained significantly lower as the dotted supply line meets demand at prices no higher than approximately \$731/MWh during HE18.

202. Absent any physical withholding by GDF Suez, based on the above supply/demand analysis, the average clearing price is estimated to have been approximately \$48/MWh. Compared to the realized \$111/MWh, this translates into a settlement difference of \$50,400 for an ICE futures contract of size 50MW.

203. GDF Suez's conduct on this day damaged Aspire, which took a 2,950MW short position into real time on November 22, 2013, suffering losses of \$3,309,120.

204. Aspire entered its short position based on known market conditions. Specifically – on November 21, 2013 – the Day-Ahead ICE futures contracts for delivery on November 22, 2013 traded at a 8.15 heat rate vs. Waha natural gas and the ERCOT Day-Ahead market cleared a 8.21 heat rate vs. Waha. Additionally, ERCOT's peak load forecast at 10:00 on November 21, 2013 for November 22, 2013 was 38,213MWs, and ERCOT's peak wind forecast was extremely high at 6,926MWs. For comparison, November's all-time high load at the time was 45,143MWs. Additionally, ERCOT's 3:00pm short-term adequacy report showed ERCOT to have 45,875MWs to cover peak load. Given the modest load forecast as well as the extremely high wind forecast, Aspire felt there was ample gas generation that would be committed Day Ahead to meet forecasted demand based on fundamentals. As such, Aspire decided to take a 2,950MW short position into real time on November 22, 2013.

205. At the beginning of the trading day on November 22, 2013, ERCOT revised its peak load forecast to 38,700MWs. By 8:00am CST, wind production was only 5,302 MWs,

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notably under forecast, and at 8:34am CST, ERCOT issued an advisory for physical responsive capability being below 3,000MWs. Wind production continued to underperform throughout the day, keeping the BalDay contract elevated. By 4:00pm CST – when wind production dropped to 2,893 MWs, Aspire learned that ERCOT had called generators to inform them that wind farms were icing up and limiting production.

206. At 4:47pm CST, Aspire decided to stop out of some of its position at a range of \$68.75 to \$73 before the top of the hour, when ERCOT's real-time LMP North\_Hub was averaging \$60.34.

207. At 5:51pm CST, when the market was about to close and GDF Suez kept its generating facilities off-line – as described above – thus manipulating the HB\_North ICE BalDay futures contract price higher, Aspire stopped out of an additional 200MWs at a range of \$100-\$120. Aspire was not able to completely limit its exposure, however, and took a 2,950 MW position into the market clear realizing a \$3,309,120.

#### Monday, January 6, 2014

208. Due to extreme weather on 1/6/2014, ERCOT nearly experienced a black-out.

ERCOT described this day in the "Final Report: January 6 2014 EEA" released on 3/7/2014:

The morning of January 6, 2014, ERCOT entered into emergency operations. The unavailability of generation resources due to outages, derates, and failures to start in conjunction with freezing conditions contributed to the event. As the load increased due to the morning ramp and generation resource unavailability continued to increase, reserves declined. At 06:52 ERCOT entered level 1 of its Energy Emergency Alert (EEA) plan. EEA level 2 was declared at 07:01 during which Non-Spin, Load Resources (LR) and Emergency Reserve Service (ERS) were deployed. At 07:51 ERCOT exited EEA level 2 and reentered back into EEA level 1 due to improving conditions, and at 09:12 ERCOT exited EEA level 1 and resumed normal operations. Media appeals were issued and no firm load shed actions were taken.

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209. January 6, 2014 was the 3<sup>rd</sup> coldest January day in the past 10 years, and the 8<sup>th</sup> coldest January day since 1960 in Texas. Actual high temperatures were only 33 degrees in Dallas, 39 degrees in San Antonio, and 36 degrees in Houston, with lows of 15 degrees, 27 degrees, and 27 degrees, respectively. The wind made things worse, giving Dallas a wind chill of just 2 degrees.

210. This weather event was not unexpected, however. The Friday before, weather forecasters began indicating that a major cold shot was coming, and the day-ahead WSI and GFS forecasts, were nearly spot-on.

211. In addition to the weather forecast, ERCOT had issued warnings beginning the morning of the previous day:

On January 5, 2014, a cold weather front swept across the ERCOT region, bringing with it freezing conditions across much of the Interconnection the evening of the 5th and into the 6th. An Advisory was issued at 10:00 on January 5 for the impending cold weather. Peak load was forecasted to be 54,442 MWs and adequate resources were forecasted to be online to serve peak load for HE08 on the 6th. Between midnight on January 6 and the time EEA was issued at 06:52, significant generation became unavailable due to trips, derates, or failures to start, causing Physical Responsive Capability (PRC) to degrade over the morning hours.

212. According to ERCOT Protocol section 6.5.9.3.2(1): "An Advisory is the second of four levels of communication issued by ERCOT in anticipation of a possible Emergency Condition."

213. The Advisory was followed at 6:47 by a Watch (the third of four levels of communication in anticipation of a possible Emergency Condition).

214. For this day, the Day-Ahead Market average price for the 16 hour peak period HE7-22 cleared for Hays Energy: \$52.50/MWh for HAYSEN1\_2 and HAYSEN\_3\_4, and for Midlothian: \$52.43/MWh for MDANP\_CT1\_2, and \$52.52/MWh for both MDANP\_CT3\_4 and MDANP\_CT5\_6.

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215. GDF Suez submitted Energy Offer Curves to the Day-Ahead Market with units of both Hays Energy and Midlothian offered at full capacity for \$29/MWh. Thus, both Hays Energy and Midlothian were "in-the-money" and would have been dispatched by ERCOT were it not for withholding by GDF Suez.

216. During the operating day, GDF Suez submitted Energy Offer Curves with the majority of capacity offered for around \$30/MWh for units of Hays Energy and \$30-34/MWh for units of Midlothian. In the Real Time Market, despite the fact that Hays Energy and Midlothian would be producing electricity at a profit, GDF Suez opted to physically withhold capacity from the grid as detailed in the following table.

Resource Name	HE7-10	HE11-12	HE13-14	HE15-16	HE17	HE18-22
HAYSEN_HAYSENG1	ON	ON	ON	ON	ON	ON
HAYSEN_HAYSENG2	EMR	EMR	EMR	EMR	EMR	EMR
HAYSEN_HAYSENG3	EMR	EMR	OFF	OFF	OFF	EMR
HAYSEN_HAYSENG4	ON	ON	ON	ON	ON	ON
MDANP_CT1	ON	ON	ON	ON	ON	ON
MDANP_CT2	ON	ON	ON	ON	ON	ON
MDANP_CT3	ON	ON	ON	ON	ON	ON
MDANP_CT4	EMR	OFF	OFF	STARTUP	ON	ON
MDANP_CT5	ON	ON	ON	ON	ON	ON
MDANP_CT6	OUT	OUT	OUT	OUT	OUT	OUT

217. As described in the ERCOT report, the severe cold caused a large number of generation facilities to become (partially) unavailable. The report contains a list of units which experienced a trip, failure to start, or de-rate during January 6 2014. Hays Energy and Midlothian are not on this list.

218. After the emergency event passed, at 10:45, GDF Suez changed the Resource Status on Midlothian unit 4 to OFF, from EMR. This unit thus became only then available for ERCOT's HRUC process, whereby for reliability ERCOT can force a unit online. As discussed,

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a unit is shielded from the HRUC process when Resource Status is set to EMR. Later in the day, Midlothian unit 4 completed its start-up sequence between 14:15 and 16:15 and was operating at full capacity in time for the evening peak.

219. At 12:45, GDF Suez changed the Resource Status on Hays Energy unit 3 to OFF, from EMR. Hays Energy unit 3 was thus also available for dispatch by ERCOT's HRUC process. However, at the time when ERCOT would have the most need for this capacity during the evening peak, GDF Suez returned this unit to Resource Status EMR again.

220. These facts indicate that these units are perfectly capable of operating and that GDF Suez's use of the EMR designation is not related to any physical need to have its units removed from generation, but from an incentive to artificially limit the supply of electricity to the ERCOT system and artificially create scarcity in order to artificially drive the LMP up.

221. During HE7 and HE8 the Reserve Capacity went to virtually nil. ERCOT had to resort to extreme measures such as shedding load, utilizing the Emergency Response System ("ERS"), and requesting conservation from the public.

222. The price cap was reached during almost all of HE7 and during several intervals of HE8. The realized hourly LMP averages in \$/MWh for the morning are shown in the table below:

Settlement Point	HE6	HE7	HE8	HE9	HE10	HE11	HE12
HB_NORTH	204.78	4,484.15	2,268.33	649.98	595.65	154.27	87.20
HAYSEN_1_2	164.03	4,402.51	1,904.52	477.94	530.91	88.72	59.95
HAYSEN_3_4	164.03	4,402.51	1,904.52	477.94	530.91	88.72	59.95
MDANP_CT1_2	206.85	4,494.47	2,267.57	620.51	586.30	154.80	87.44
MDANP_CT3_4	207.96	4,498.69	2,264.50	623.81	588.50	155.55	87.77
MDANP_CT5_6	207.96	4,498.69	2,264.50	623.81	588.50	155.55	87.77

223. Meanwhile, despite price signals from the Day-Ahead Market, extremely high LMPs in real-time, ICE futures contracts trading at very high prices, and despite weather

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forecasts pointing to the cold spell well in advance and multiple early warnings and appeals by ERCOT, GDF Suez had over 700MW of deep "in-the-money" capacity sitting idle during the morning's emergency event.

224. The graph below shows the LMP for HB\_NORTH reaching the price cap (and even higher because of transmission congestion) for a prolonged period of time. The BalDay ICE futures contract transactions are displayed on the same timeline.



225. As Midlothian unit 4 only started operation later in the day, it is plausible that GDF Suez sold ICE futures contracts for HB\_NORTH as a proxy to their unit's MDANP\_CT3\_4
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node. As can be seen in prior tables, the prices at HB\_NORTH and the MDANP nodes are highly correlated. Initially, this would have led to a short position for the contract period of HE7-22. However, the morning peak just being realized, the remaining risk on this position was the evening demand peak during HE18-22. By starting up Midlothian 4, the electricity generated by that unit would offset the futures contract as a proxy hedge.

226. Assuming GDF Suez sold just five contracts of the BalDay HB\_NORTH futures contract at \$700/MWh around 8:00 am, and using a generation cost of \$33.57/MWh according to the real-time Energy Offer Curves, GDF Suez could have locked in a profit of \$637,377 as calculated in the table:

υε	MDANP_CT4	MDANP_CT3_4	Result	Futures	HB_NORTH	Result	Net Profit
пс	Output (MW)	LMP (\$/MWh)	(\$)	Position (MW)	LMP (\$/MWh)	(\$)	(\$)
7	0	\$4,498.69	\$0	-250	\$4,484.15	-\$946,038	-\$946,038
8	0	\$2,264.50	\$0	-250	\$2,268.33	-\$392,083	-\$392,083
9	0	\$623.81	\$0	-250	\$649.98	\$12,505	\$12,505
10	0	\$588.50	\$0	-250	\$595.65	\$26 <i>,</i> 089	\$26,089
11	0	\$155.55	\$0	-250	\$154.27	\$136,433	\$136,433
12	0	\$87.77	\$0	-250	\$87.20	\$153,201	\$153,201
13	0	\$51.93	\$0	-250	\$51.79	\$162,052	\$162,052
14	0	\$54.66	\$0	-250	\$54.66	\$161,336	\$161,336
15	8	\$45.36	\$94	-250	\$45.36	\$163,661	\$163,755
16	19	\$42.23	\$164	-250	\$42.22	\$164,444	\$164,609
17	156	\$43.78	\$1,593	-250	\$43.78	\$164,054	\$165,648
18	233	\$76.91	\$10,098	-250	\$76.63	\$155,843	\$165,941
19	234	\$108.60	\$17,576	-250	\$108.06	\$147,985	\$165,561
20	235	\$96.21	\$14,735	-250	\$95.58	\$151,105	\$165,840
21	236	\$69.83	\$8,556	-250	\$69.68	\$157,581	\$166,137
22	236	\$48.54	\$3,526	-250	\$48.54	\$162,865	\$166,391
7-22		\$553.55	\$56,344		\$554.74	\$581,033	\$637,377

After the morning peak, between noon and 4pm the BalDay futures contract traded between \$575/MWh and \$625/MWh. Assuming that GDF Suez would have sold five contracts later in the day at a price of \$600 that would still have resulted in a net profit of \$237,377.

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227. This shows that withholding capacity paid off for GDF Suez, because, if instead GDF Suez had sold in the Day-Ahead Market, a much lower profit would have been obtained in the amount of 16 hours \* 237MW \* (52.52 - 29.16) = \$88,581.

228. The events during the morning and ERCOT's reliance on the variety of measures (mentioned above) to keep the grid from blacking out, makes the situation incredibly complex to model and analyze like the previous days discussed in this complaint. Short of running various scenarios on ERCOT's own modelling engine, there is little point in trying to estimate what prices would have been if GDF Suez had operated Hays Energy unit 2 and 3, and Midlothian unit 4.

229. Besides impact on pricing, on this day reliability was of most importance. If GDF Suez had their three deep "in-the-money" units synchronized to the ERCOT grid, they would have contributed to stabilizing the grid's frequency. Combined-cycle facilities such as Hays Energy and Midlothian are extremely well suited for rapidly ramping up and down in order to support frequency.

### Monday, February 10, 2014

230. ERCOT anticipated another possible Emergency Condition on February 10, 2014. On February 9, 2014, ERCOT issued an OCN at 20:46 due to a cold front impacting the region stating that "ERCOT expects freezing temperatures and the possibility of frozen precipitation for a large portion of the ERCOT Region."

231. By 8:51 on February 10, 2014, ERCOT upgraded the reliability directive to an Advisory, stating:

At 9:00 ERCOT is issuing an advisory due to the cold front impacting the region through Wednesday morning. Freezing temperatures and frozen precipitation are expected to impact a large portion of the area. QSE's are instructed to: review fuel supplies [and] notify ERCOT of any fuel

restrictions[;] keep COPs and HSL telemetry updated[;] review planned [sic] resource outages and consider delaying maintenance or returning from outag[e] early[;] review and implement weatherization and emergency operating procedures including weatherization procedures[;] notify ERCOT of any changes or conditions that could affect system reliability. ERCOT will continue to monitor the weather.

232. Despite ERCOT's advisory and instructions, GDF Suez physically withheld

several units from the grid.



233. For this day, the Day-Ahead Market average price for the 16 hour peak period HE7-22 cleared for Hays Energy: \$58.77/MWh for HAYSEN1\_2 and HAYSEN\_3\_4, and for Midlothian: \$61.35/MWh for MDANP\_CT1\_2, MDANP\_CT3\_4 and MDANP\_CT5\_6.

234. GDF Suez submitted Energy Offer Curves to the Day-Ahead Market with units of both Hays Energy offered at full capacity for \$46-52/MWh and Midlothian units offered at full

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capacity for \$47.79/MWh. Thus, both Hays Energy and Midlothian were "in-the-money" and would have been dispatched by ERCOT were it not for withholding by GDF Suez.

235. During the operating day, GDF Suez submitted Energy Offer Curves with the majority of capacity offered for around \$47/MWh for units of Hays Energy and \$46/MWh for units of Midlothian.

236. The realized hourly LMP averages in \$/MWh for the evening peak are shown in the table below:

Settlement Point	HE16	HE17	HE18	HE19	HE20	HE21
HB_NORTH	123.30	216.03	473.51	516.23	210.57	119.80
HAYSEN_1_2	97.36	181.78	433.46	481.49	151.93	89.75
HAYSEN_3_4	97.36	181.78	433.46	481.49	151.93	89.75
MDANP_CT1_2	140.10	219.27	475.95	516.68	211.15	120.03
MDANP_CT3_4	138.49	220.17	477.67	517.30	211.96	120.38
MDANP_CT5_6	138.49	220.17	477.67	517.30	211.96	120.38

237. The graph below shows the LMP for HB\_NORTH and transactions for the BalDay ICE contract on the same timeline.

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238. During the morning of 2/10/2014, between 10:00 and 11:00, the surplus capacity in the ERCOT grid ("Capacity with Energy Offer Curves available to increase Generation Resource Base Points in SCED") reached low levels, causing several LMP spikes up to \$164/MWh. The response of the HB\_NORTH BalDay ICE futures contract was a price increase from around \$100/MWh to \$150/MWh, as the event in this hour was considered an indication of a potential more significant capacity shortage later in the day.

239. While the ICE BalDay futures contract already traded at elevated prices, far above the generation cost of Hays Energy and Midlothian, this run-up certainly was the price signal

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GDF Suez would have to respond to by starting up Hays Energy unit 2 and Midlothian unit 4. Even if these units were 'cold', in a mere 2 hours could they be on-line and synchronized to the grid.

240. Nevertheless, despite ERCOT's early warnings and multiple price signals, GDF Suez was unwilling to run their available generation resources at prices as high as \$150/MWh for the HE7-22 block, or not even for the average price of \$234/MWh for the 8-hour runtime during evening peak HE15-22. Instead, GDF Suez opted to physically withhold capacity from the grid by designating Resource Status EMR to units HAYSEN\_HAYSENG2, HAYSEN\_HAYSENG3, and MDANP\_CT4 for the entire day. GDF Suez thereby caused LMPs to spike and subsequently the ICE futures to move higher.

241. After an afternoon with hours of volatile price behavior, the average LMP for HB\_NORTH for the peak period HE7-22 eventually cleared \$153.14/MWh. Congestion on this day mostly impacted the nodes for Hays Energy, lowering the average clearing price somewhat. The average LMP cleared \$136.69/MWh for HAYSEN1\_2 and HAYSEN3\_4, and \$156.24/MWh for MDANP\_CT1\_2, and \$156.26/MWh for MDANP\_CT3\_4, and MDANP\_CT5\_6.

242. The graph shows the actual supply curve for HE18 and the range of the demand curve during HE18.

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243. Had GDF Suez ran their "in-the-money" units that were physically withheld, the supply curve would have followed the dotted line in the graph. With the shift to the right, the individual LMP prints would have remained significantly lower as the dotted supply line meets demand at prices no higher than approximately \$350/MWh during HE18. Instead, as shown by the solid line supply curve meeting the upper bound demand line, realized LMPs went higher than \$1,400/MWh.

244. Absent any physical withholding by GDF Suez, based on the above supply/demand analysis, the averaging clearing price is estimated to have been approximately \$83/MWh. Compared to the realized \$153/MWh, this translates into a settlement difference of \$56,000for an ICE futures contract of size 50MW.

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245. For February 10, 2014, Raiden had sold in the Day-Ahead Market for Settlement Point HB)North: 495.1MW for HE7, 875.6MW for HE8, and 500MW for the hours HE 9-22. Based on the analysis above, GDF Suez's physical withholding caused Raiden to suffer losses in the amount of \$562,092.

246. GDF Suez's conduct on this day also damaged Aspire, which took a 2,150MW short position into real time on February 10, 2013, but increased its short position throughout the day to a total of 2,650MW, thus suffering losses of \$2,973,936.

247. Aspire entered its short position based on known market conditions. Specifically – on February 7, 2014 – the Day-Ahead ICE futures contracts for delivery on February 10, 2014 traded at a 8.81 heat rate vs. Waha natural gas and the ERCOT Day-Ahead market cleared a 9.36 heat rate vs. Waha. Due to an unusually cold January and February, Houston Ship Channel gas traded \$6,85 and Waha traded \$6.58, respectively. Additionally, ERCOT's peak load forecast at 10:00 on February 9, 2014 for February 10, 2014 was 45,079MWs, and ERCOT's peak wind forecast was 3,265MWs. For comparison purposes, February's all-time high load has been observed to be 57,265MWs. Given the above-average wind forecast and a relatively high spark spread, Aspire decided to take a 2,150MW short position into real time on February 10, 2014.

248. At the beginning of the trading day on February 10, 2014, ERCOT revised its load forecast for to 46,997MWs and issued the OCN described above. ERCOT also adjusted its wind forecast to show 2,524MWs during the evening peak. Due to the lack of offers, the BalDay contract gapped up to \$140, or a 21.28 heat rate, which was up \$82 from where the Day Ahead ICE Futures Contract went out.).

249. As described above, GDF Suez continued to physically withhold generation. Throughout the day, the BalDay contract consistently traded in the triple-digits, and Aspire

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increased its short position an additional 500MWs at a weighted average sale of \$118 or a 17.93 heat rate. Aspire did this fully expecting generators to take advantage of the high premium, and as such, maintained its short position into settlement.

250. As described above, however, GDF Suez kept its generating facilities off-line, thus manipulating the HB\_NORTH ICE BalDay futures contract price higher. Absent any physical withholding by GDF Suez, based on the above supply/demand analysis, the average clearing price is estimated to have been approximately \$83/MWh. Compared to the realized \$153/MWh, this translates to a settlement difference of \$56,000 for an ICE futures contract size of 50MW. Given its short position – based on the above analysis – Aspire suffered losses in the amount of \$2,973,936.

### Monday, March 3, 2014

251. For this day, the Day-Ahead Market average price for the 16 hour peak period HE7-22 cleared for Hays Energy: \$268.59/MWh for HAYSEN1\_2 and HAYSEN\_3\_4, and for Midlothian: \$273.29/MWh for MDANP\_CT1\_2, and \$273.45/MWh for MDANP\_CT3\_4 and MDANP\_CT5\_6.

252. GDF Suez submitted Energy Offer Curves to the Day-Ahead Market with units of Hays Energy offered at full capacity for \$37.25/MWh, and some units of Midlothian offered at full capacity for \$31.67/MWh. Thus, both Hays Energy and Midlothian were extremely deep "in-the-money" and would have been dispatched by ERCOT were it not for withholding by GDF Suez.

253. Prior to the operating day, on 3/2/2014 at 9:00 CST, ERCOT issued a Watch:

ERCOT is issuing a Watch due to the strong artic front that is making its way through the ERCOT system. ERCOT is starting to experience Resource and transmission issues. QSEs are instructed to keep COPs updated, QSEs with wind Resources need to update their COPs to reflect accurate data, Review fuel supplies

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and notify ERCOT of any known or anticipated fuel restrictions, Prepare for higher than usual loads. Review and implement weatherization and emergency operating procedures, including winterization procedures. Notify ERCOT of any changes or conditions that could affect System Reliability.

254. During the operating day of 3/3/2014, GDF Suez submitted Energy Offer Curves with the majority of capacity offered for around \$39/MWh for units of Hays Energy and \$33-40/MWh for units of Midlothian. In the Real Time Market, despite the fact that Hays Energy and Midlothian would be producing electricity at a profit, GDF Suez opted to physically withhold capacity from the grid as detailed in the following table.

Resource Name	HE1-24
HAYSEN_HAYSENG1	ON
HAYSEN_HAYSENG2	EMR
HAYSEN_HAYSENG3	EMR
HAYSEN_HAYSENG4	ON
MDANP_CT1	ON
MDANP_CT2	OUT
MDANP_CT3	ON
MDANP_CT4	EMR
MDANP_CT5	ON
MDANP_CT6	ON

255. On 3/3/2014, the LMP nearly reached the price cap for several intervals during HE7. The realized hourly LMP averages in \$/MWh during the morning demand peak are shown in the table below:

Resource Name	HE6	HE7	HE8	HE9	HE10	HE11	HE12
HB_NORTH	377.78	2523.94	1070.90	879.78	549.50	194.71	172.95
HAYSEN_1_2	417.15	2610.32	1005.75	816.69	496.65	188.69	170.90
HAYSEN_3_4	417.15	2610.32	1005.75	816.69	496.65	188.69	170.90
MDANP_CT1_2	371.77	2530.04	1078.46	885.18	549.19	193.00	172.60
MDANP_CT3_4	371.89	2530.34	1079.89	886.62	550.20	192.90	172.50
MDANP_CT5_6	371.89	2530.34	1079.89	886.62	550.20	192.90	172.50

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256. The ICE futures contract for delivery date 3/3/2014 started trading the evening before at around 8.30pm through midnight in the price range between \$350/MWh and \$650/MWh.

257. The subsequent trading activity of the ICE HB\_NORTH BalDay futures contract is shown together with the LMP for HB\_NORTH in the graph below.



258. As demonstrated in all of the previous cases, GDF Suez plainly ignored notices and warnings by ERCOT about potential emergency situation and threats to grid reliability. In the face of staggeringly high prices in the Day-Ahead Market and on ICE, GDF Suez is

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continued to physically withhold generation when the capacity was desperately needed to achieve its goals.

## **Tuesday March 4, 2014**

259. After the extremely high prices and scarcity event the previous day, GDF Suez again left deep "in-the-money", available units designated with Resource Status EMR to withhold capacity from the grid.

260. For this day, the Day-Ahead Market cleared even higher. The average price for the 16 hour peak period HE7-22 cleared for Hays Energy: \$305.00/MWh for HAYSEN1\_2 and HAYSEN\_3\_4, and for Midlothian: \$308.24/MWh for MDANP\_CT1\_2, and \$308.65/MWh for MDANP\_CT3\_4 and MDANP\_CT5\_6.

261. GDF Suez submitted Energy Offer Curves to the Day-Ahead Market with units of Hays Energy offered at full capacity for \$49.20/MWh, and some units of Midlothian offered at full capacity for \$49.52/MWh. Thus, both Hays Energy and Midlothian were for the second day in a row extremely deep "in-the-money" and would have been dispatched by ERCOT were it not for withholding by GDF Suez.

262. During the operating day 3/4/2014, GDF Suez submitted Energy Offer Curves with the majority of capacity offered for around \$51/MWh for units of Hays Energy and \$51-54/MWh for units of Midlothian. In the Real Time Market, regardless that Hays Energy and Midlothian would be producing electricity at a profit, GDF Suez again opted to physically withhold capacity from the grid as detailed in the following table.

Resource Name	HE1-24
HAYSEN_HAYSENG1	ON
HAYSEN_HAYSENG2	EMR
HAYSEN_HAYSENG3	EMR
HAYSEN_HAYSENG4	ON

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MDANP_CT1	ON
MDANP_CT2	OUT
MDANP_CT3	ON
MDANP_CT4	EMR
MDANP_CT5	ON
MDANP_CT6	ON

263. For 3/4/2014, the realized hourly LMP averages in \$/MWh for during the morning demand peak are shown in the table below:

Resource Name	HE6	HE7	HE8	HE9	HE10	HE11	HE12
HB_NORTH	75.99	235.44	117.41	93.78	73.29	72.32	70.44
HAYSEN_1_2	76.10	237.42	120.32	94.43	73.42	72.32	70.44
HAYSEN_3_4	76.10	237.42	120.32	94.43	73.42	72.32	70.44
MDANP_CT1_2	75.99	235.47	117.46	93.79	73.29	72.32	70.44
MDANP_CT3_4	75.99	235.52	117.53	93.80	73.29	72.32	70.44
MDANP_CT5_6	75.99	235.52	117.53	93.80	73.29	72.32	70.44

264. The graph below shows the LMP for HB\_NORTH and transactions for the BalDay ICE contract on the same timeline. GDF Suez's physical withholding again caused the LMP to spike to high levels, with subsequent volatile trading of the ICE BalDay futures contract as a consequence.

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265. The above examples of GDF Suez's intentional withholding and intentional manipulation of contracts traded on ICE violate the CEA and have caused Plaintiffs damages. GDF should be ordered to compensate Plaintiffs for their losses and it should ordered to stop its illegal behavior.

# **COUNT I: VIOLATION OF THE CEA**

266. Aspire incorporates herein the allegations contained in paragraphs 1-265 of its Complaint.

267. The CEA, 7 U.S.C. § 9(1), provides in relevant part:

It shall be unlawful for any person, directly or indirectly, to use or employ, or attempt to use or employ, in connection with any swap, or a contract of sale of any commodity in interstate commerce, or for future delivery on or subject to the rules of any registered entity, any manipulative or deceptive device or contrivance, in contravention of such rules and regulations as the Commission shall promulgate by not later than 1 year after July 21, 2010.

268. The CEA, 7 U.S.C. § 9(3), provides in relevant part:

In addition to the prohibition in paragraph (1), it shall be unlawful for any person, directly or indirectly, to manipulate or attempt to manipulate the price of any swap, or of any commodity in interstate commerce, or for future delivery on or subject to the rules of any registered entity.

269. The CEA, 7 U.S.C. § 9(2) provides in relevant part:

It shall be unlawful for any person to make any false or misleading statement of a material fact to the Commission, including in any registration application or any report filed with the Commission under this chapter, or any other information relating to a swap, or a contract of sale of a commodity, in interstate commerce, or for future delivery on or subject to the rules of any registered entity, or to omit to state in any such statement any material fact that is necessary to make any statement of a material fact made not misleading in any material respect, if the person knew, or reasonably should have known, the statement to be false or misleading.

270. The CEA allows a private right of action for those actually damaged by violations

of Sections 9(1) – (3). See 7 U.S.C. § 25.<sup>17</sup>

271. Through its multiple withholding schemes described above, GDF Suez intentionally, knowingly, and recklessly manipulated, and continues to manipulate, the price of

<sup>&</sup>lt;sup>17</sup> For at least the following three reasons, the CFTC exemption applicable to ERCOT transactions contained in the CFTC's April 2, 2013 Final Order does not apply to Plaintiff's claim under the CEA directed at Defendants' manipulation of commodities contracts on ICE: (1) the Final Order exempts only transactions that take place in markets administered by "Requesting Parties," which does not include ICE; (2) the Final Order applies only to "Covered Transactions," which do not include transactions on ICE; (2) the Final Order applies only to transactions occurring pursuant to a Requesting Party's tariff, rate schedule or protocol, which does not include transactions on ICE.

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electricity in the ERCOT market and has caused the prices in ERCOT's Real Time market to increase artificially (i.e. not in accord with legitimate forces of supply and demand).

272. GDF Suez's knows and intends that its creation of artificially high prices in the ERCOT Real Time market for electricity has created and will create artificially high prices at the hubs that determine the price of various electricity contracts in commodities markets, such as ICE. GDF Suez intends for its withholding schemes to manipulate the prices at hubs within ERCOT and thus intends for its withholding schemes to manipulate commodities contracts on ICE, which are based upon hub prices in ERCOT.<sup>18</sup> And that is exactly what happened.

273. The CEO and President of GDF Suez Energy Marketing NA, Inc. of GDF Suez Energy North America, Inc. confirmed GDF Suez's intent by sitting at GDF Suez's trading desk during times GDF Suez participated in its economic withholding scheme and commenting "did we move the forward markets."

274. Just as Potomac Economics explained, GDF Suez intentionally creates artificially high prices on ICE and directly manipulates the values in virtual trades so that it is able gain more on its trades or hedging opportunities than it loses by not selling energy within ERCOT at prices that substantially exceed its marginal costs. Those actions have violated and continue to violate 7 U.S.C. §§ 9(1) and (3), have caused Plaintiffs damages and are recoverable by Plaintiffs under 7 U.S.C. § 25.

275. GDF Suez's statements of its expected generation within ERCOT on days where it intended to withhold generation did not disclose that intent or its intended and known effect. Thus, its statements regarding expected generation were knowingly or recklessly false or

<sup>&</sup>lt;sup>18</sup> Plaintiffs are not challenging – and their claim is not based on – the LMP prices in ERCOT. It does not claim those LMPs are unlawful, wrong or too high. Rather, Plaintiffs' claim is based on GDF Suez's manipulation of the ICE contracts through its manipulation of LMPs within ERCOT. Accordingly, the "filed rate" doctrine has no application to Plaintiffs' claims.

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misleading or omitted material information which made its statements false or misleading. GDF Suez's intentional, knowing or reckless dissemination of false and misleading information caused Aspire and Raiden damages because the markets and Aspire and Raiden made trading decisions based upon the false information GDF Suez disseminated. GDF Suez's intentional or reckless dissemination of false and misleading information has violated and continues to violate 7 U.S.C. §§ 9(1) - (3), caused Plaintiffs damages and are recoverable by Plaintiffs under 7 U.S.C. §  $25.^{19}$ 

276. GDF Suez's intentional manipulation of prices for electricity contracts in commodities markets such as ICE has caused Aspire to suffer more than \$20 million in damages, as detailed above, by creating artificial prices for electricity contracts traded on ICE and has caused Raiden damages from its trades on ERCOT's virtuals markets.

## COUNT II: CONSPIRACY AND AIDING AND ABETTING

277. Aspire incorporates herein the allegations contained in paragraphs 1-276 of its Complaint.

278. GDF SUEZ Energy North America, Inc., Ennis Power Company, LLC, Wise County Power Company, LLC, Midlothian Energy, LLC, Hays Energy, LLC, Wharton County Generation, LLC, and Coleto Creek Power, LP have agreed and conspired and worked in concert, such that one is the agent of the other, to manipulate the LMP prices within ERCOT through the above-identified withholding schemes with the intent and effect of manipulating the

<sup>&</sup>lt;sup>19</sup> Plaintiffs' claim is not based on GDF Suez's trading on private information. Rather, it is based on the harm Plaintiffs have suffered from GDF Suez intentionally manipulating ICE prices and ERCOT virtual values by making false and misleading statements and engaging in artificial economic withholding with the intent to manipulate the ICE market. GDF Suez's actual trades are irrelevant to Plaintiffs' claims. Plaintiffs' claims are directed at the illegal mechanisms GDF Suez uses to facilitate and advantage its trades and hedges.

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prices for electricity contracts in commodities markets such as ICE in violation of 7 U.S.C. §§ (9)(1), (2) and (3).

279. Each defendant is therefore liable for the others' actions and all defendants are liable for the damages they have caused Aspire and Raiden, as a result of their agreement and conspiracy, and their actions in furtherance thereof, to violate the CEA.

280. Defendants Ennis Power Company, LLC, Wise County Power Company, LLC, Midlothian Energy, LLC, Hays Energy, LLC, Wharton County Generation, LLC, and Coleto Creek Power, LP knew of GDF Suez Energy North America, Inc.'s intent to manipulate ICE and the ERCOT virtual markets through their economic and physical withholding of energy.

281. Indeed, the above entities' knowledge and intended cooperation was essential to the intent to manipulate those markets since they are the generation entities whose generation was artificially withheld. The market manipulation could not have been accomplished but for the above entities' knowledge, cooperation and intentional participation in the manipulation schemes, specifically through their artificial withholding of generation described in detail above.

282. Separately and alternatively, GDF Suez Energy North America, Inc.'s intent to manipulate must be inferred to the above generation entities since GDF Suez Energy North America, Inc. controls their generation decisions. The generation entities do not have a will regarding their generation separate from GDF Suez Energy North America, Inc.

283. Accordingly, the above generation entities have also violated the CEA by aiding and abetting GDF SUEZ Energy North America, Inc.'s violation of the CEA by intentionally following GDF SUEZ Energy North America, Inc.'s instructions to economically and physically withhold energy to (a) to cause artificially high LMP prices; (b) to cause artificially high prices

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and hedging and speculation opportunities on commodities exchanges like ICE; and (c) to directly manipulate the values of ERCOT virtual trades.

284. Defendants' concerted actions have caused Aspire and Raiden damages.

## **COUNT III: PERMANENT INJUNCTION**

285. Aspire incorporates herein the allegations contained in paragraphs 1-284 of its Complaint.

286. GDF Suez has violated the CEA through the above identified economic and physical withholding schemes.

287. GDF Suez's illegal conduct has caused Aspire and Raiden injuries for which there is no monetary relief; namely, GDF Suez's illegal manipulation has introduced volatility into the commodities markets so that on many occasions Aspire and Raiden cannot reasonably participate in those markets. To the extent that the opportunity cost in such instances cannot be quantified with any certainty, Aspire and Raiden have suffered injury for which an action at law is inadequate and therefore Aspire has suffered from GDF Suez's illegal conduct and will continue to suffer such harm unless GDF Suez's illegal manipulation in violation of the CEA is enjoined. Thus, if the Court finds that Plaintiffs' lost opportunities cannot be reasonably quantified, Aspire and Raiden have suffered irreparable harm.

288. The CEA evidences a public policy against GDF Suez's manipulative schemes.

289. The irreparable harm to Aspire and Raiden, and to the market generally, is greater if GDF Suez's manipulative schemes are allowed to continue than the harm to GDF Suez if its manipulative scheme is enjoined since GDF Suez will not suffer any legitimate harm from it being ordered to stop illegal conduct.

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290. Accordingly, the Court should permanently enjoin GDF Suez from economically withholding its generation, as described above, and from physically withholding its generation absent a legitimate reason for such physical withholding.

# **COUNT IV: DECLARATORY RELIEF**

291. Aspire incorporates herein the allegations contained in paragraphs 1-290 of its Complaint.

292. An actual, substantial, and *bona fide* controversy exists, under 28 U.S.C. § 2201, between Aspire and GDF Suez, of immediacy and reality, and which can be resolved by a declaration of the parties' rights. Specifically, whether GDF Suez, through its economic and physical withholding schemes and its dissemination of false and misleading information, identified above, has violated 7 U.S.C. §§ 9(1), (2) and/or (3).

293. The rights of the parties to this controversy can be finally determined by a declaratory judgment from this Court. A declaratory judgment would serve the useful purpose of settling the controversy, in that such a judgment would eliminate further litigation by finally establishing the parties' rights.

294. Accordingly, Aspire and Raiden request that the Court declare:

- That by its economic withholding of generation capacity as described above, with the intent to manipulate the price of electricity contracts in the commodities markets, GDF Suez has violated 7 U.S.C. §§ 9(1) and (3);
- That by its physical withholding of generation capacity as described above, with the intent to manipulate the price of electricity contracts in the commodities markets, GDF Suez has violated 7 U.S.C. §§ 9(1) and (3);
- That by its dissemination of false and misleading information regarding its expected generation GDF Suez has violated 7 U.S.C. §§ 9(1)-(3);
- That GDF Suez's illegal actions have caused Aspire and Raiden damages;

• That GDF Suez should be permanently enjoined from disseminating false information regarding its generation and from manipulating the price of electricity contracts in the commodities markets.

# JURY REQUEST

295. Plaintiffs request a trial by jury.

# **PRAYER FOR RELIEF**

WHEREFORE, plaintiffs Aspire Commodities, LP and Raiden Commodities, LP, request that the Court enter judgment in their favor on all issues raised in this Complaint, for damages sufficient to compensate them for their losses, for twice their damages as statutory damages because Defendants' illegal conduct was intentional and wilful, for the declaratory relief requested above, and for a permanent injunction ordering GDF Suez to cease its economic and physical withholding of generation and to cease its dissemination of false and misleading information regarding its expected generation, and for all other just and proper relief.

Respectfully submitted,

/s/ Barrington M. Hammond, Jr.

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# **CERTIFICATE OF SERVICE**

I certify that a copy of the foregoing was filed electronically via the Court's ECF system on this 14<sup>th</sup> day of July, 2014. Notice of this filing will be sent to all counsel of record by operation of the Court's electronic filing system.

/s/ Barrington M. Hammond, Jr.

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# **Press release**

The College of Competition Prosecutors of the Belgian Competition Council found that Electrabel (GDF Suez) abused its dominant position on the Belgian market for generation, wholesale and trading of electricity as well as on the Belgian market for supply of tertiary reserve services

Brussels, 7 February 2013

The College of Competition Prosecutors has filed today a reasoned report with the Competition Council as a result of practices revealed by the Belgian Regulator for Electricity and Gas (hereafter, the *CREG*) in its study 860 concerning conducts on the wholesale market for electricity in Belgium in 2007 and the first six months of 2008.

In the framework of this study, the CREG examined (i) a certain number of abnormal price peaks on the Belgian power exchange Belpex as well as (ii) conducts of Electrabel and SPE in relation with these peaks in 2007 and the first six months of 2008. The CREG could find, based on data available at the time of its study, that during the year 2007 and the first six months of 2008, Electrabel did not use all its available capacities while submitting at the same time purchase orders with very high bid prices on Belpex. These conducts contributed, among others, to a global price increase on the Belpex exchange.

The investigation has been conducted by the College of Competition Prosecutors with the collaboration of the Directorate General of Competition of the FPS Economy. Moreover, the College of Competition Prosecutors cooperated closely with the CREG through the nomination of experts from this regulator in order to analyse some relevant elements revealed by the investigation.

In its report the College of Competition Prosecutors brings forward the existence of an abuse of dominant position, on account of Electrabel, forbidden by art. 3 of the Belgian Competition Act consolidated on the 15<sup>th</sup> of September 2006 and by article 102 of the treaty on the functioning of the European Union.

The established infringements as regards Electrabel concerns, on the one hand, capacity withholding by Electrabel on the Belgian market for generation, wholesale and trading of electricity from 2007 to 2010, and, on the other hand, fictive sale and double use of tertiary reserve on the Belgian market for the supply of tertiary reserve services from 2006 to 2007.

This case will be brought before a decision making panel of the Belgian Competition Authority, where Electrabel will be able to defend itself. Electrabel can submit a reply in writing, and will be heard at an oral hearing. The possibility of defending itself before a decision making panel of the Belgian Competition Authority provides Electrabel with the possibility of bringing all factual elements and relates as much to the dispute of the facts on which the report is based as to the application of the law.

The decision making panel of the Belgian Competition Authority will decide whether or not there was an infringement of competition law. The report does not prejudge this decision.

Finally, the College of Competition Prosecutors would like to stress that both Electrabel and the GDF Suez group effectively cooperated with the College during its investigation. In order to reward this cooperation, the College proposed a substantial reduction of a possible fine that would be imposed by the Competition Council.

Notes

- 1. On 11 and 12 June 2009, the CREG made public some of the conclusions of its study 860 concerning conducts on the wholesale market for electricity in Belgium in 2007 and the first six months of 2008.
- 2. The Directorate General of Competition conducted dawn raids at the premises of several companies active in the wholesale of electricity in Belgium from 22 to 29 September 2009. These dawn raids made it possible to collect more than 12,000 pages of paper documents.
- 3. The investigation required the individual analysis of more than 1 million orders submitted by Electrabel on Belpex. In total, more than 30,000 pages of paper documents (and as many pages of electronic documents) were collected during the investigation. The final reasoned report which was filed today with the Competition Council is more than 600 pages long.
- 4. Only some of the practices revealed by the CREG in its study 860 were considered in the reasoned report as being abusive. Indeed, the College of Competition Prosecutors could find, among others, that some of the critical data, communicated by Electrabel and on which the CREG based its analysis, were not correct. On the other hand, the reasoned report of the College went beyond June 2008 (the last month analysed in the study 860) in its analysis of the practices.
- 5. Following the investigation, it was estimated that the practices of withholding could result in a damage of EUR 33 to 49 million for the consumers/customers from 2007 to 2010. It should be noted that the practices had also some effects in France and the Netherlands.
- 6. Following the investigation, it was estimated that the practices of fictive sale and double use could result in a damage of EUR 7 million for the consumers/customers from 2006 to 2007.
- 7. To maintain frequency and voltage and reduce imbalances between production and consumption or congestion on the grid, the transmission system operator (Elia) must have power reserves. The tertiary reserve is one of these power reserves. It allows Elia to deal with a major or systematic imbalance in the control area and to resolve major congestion problems. It is activated manually at the request of Elia. It must be available within 15 minutes and can be supplied by both spinning and non-spinning units, provided that these last units can be started within less than 15 minutes. Elia purchases tertiary reserve through tender offers. Therefore, the obligations of Elia and its supplier of tertiary reserve origin from a contract. From 2006 to 2011, several contracts have been concluded between Elia and Electrabel concerning the supply of tertiary reserve services.

#### For further information:

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P13	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00
MW13	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650
P12	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	5,000.00	5,000.00	5,000.00	5,000.00	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10
<b>SEWIM</b>	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650
P11	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	4,999.99	4,999.99	4,999.99	4,999.99	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
TIMM	635	635	635	635	635	635	635	635	635	635	635	635	450	450	450	450	635	635	635	635	635	635	635	635	635	635	635	635	635
PIO	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97
MW10	634	634	634	634	634	634	634	634	634	634	634	634	449	449	449	449	634	634	634	634	634	634	634	634	634	634	634	634	634
62	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96
6MM	607	607	607	607	607	607	607	607	607	607	607	607	436	436	436	436	607	607	607	607	607	607	607	607	607	607	607	607	607
P8	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96
MW8	564	564	564	564	564	564	564	564	564	564	564	564	421	421	421	421	564	564	564	564	564	564	564	564	564	564	564	564	564
P7	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95
7WM	521	521	521	521	521	521	521	521	521	521	521	521	407	407	407	407	521	521	521	521	521	521	521	521	521	521	521	521	521
P6	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77
MW6	520	520	520	520	520	520	520	520	520	520	520	520	406	406	406	406	520	520	520	520	520	520	520	520	520	520	520	520	520
PS	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61
MWS	436	436	436	436	436	436	436	436	436	436	436	436	379	379	379	379	436	436	436	436	436	436	436	436	436	436	436	436	436
Output	632	632	631	631	633	633	632	641	644	638	642	652	646	578	540	479	457	498	555	608	629	629	630	632	634	634	633	631	628
Time	13:00	13:15	13:30	13:45	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	18:00	18:15	18:30	18:45	19:00	19:15	19:30	19:45	20:00

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MW12	203	203	203	203	202	202	202	202	202	202	202	202	202	202	202	202	203	203	203	203	203	203	203	203	205	205	205	205	206
P11	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99
11WM	191	191	191	191	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	191	191	191	191	193	193	193	193	194
P10	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	4,501.00	4,501.00	4,501.00	4,501.00	4,501.00	4,501.00	4,501.00	4,501.00	4,501.00	4,501.00	4,501.00	4,501.00	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67	25.67
0T/MW	190	190	190	190	189	189	189	189	189	189	189	189	189	189	189	189	189	189	189	189	190	190	190	190	192	192	192	192	193
6d	25.66	25.66	25.66	25.66	25.66	25.66	25.66	25.66	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00	4,500.00	25.66	25.66	25.66	25.66	25.66	25.66	25.66	25.66	25.66
6MW	189	189	189	189	188	188	188	188	158	158	158	158	158	158	158	158	158	158	158	158	189	189	189	189	191	191	191	191	192
- P8	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64	25.64
MW8	188	188	188	188	187	187	187	187	157	157	157	157	157	157	157	157	157	157	157	157	188	188	188	188	190	190	190	190	191
P7	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63	25.63
7WM	186	186	186	186	185	185	185	185	155	155	155	155	155	155	155	155	155	155	155	155	186	186	186	186	188	188	188	188	189
94	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62	25.62
MW6	185	185	185	185	184	184	184	184	154	154	154	154	154	154	154	154	154	154	154	154	185	185	185	185	187	187	187	187	188
P5	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61	25.61
MW5	167	167	167	167	167	167	167	167	152	152	152	152	152	152	152	152	152	152	152	152	167	167	167	167	168	168	168	168	169
P4	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60	25.60
MW4	158	158	158	158	158	158	158	158	151	151	151	151	151	151	151	151	151	151	151	151	158	158	158	158	159	159	159	159	159
, P3	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59	25.59
MW3	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
Output	191	190	190	190	190	189	189	189	189	157	157	157	157	157	157	157	157	157	157	157	157	190	192	190	190	192	193	192	192
Time	13:00	13:15	13:30	13:45	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	18:00	18:15	18:30	18:45	19:00	19:15	19:30	19:45	20:00

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AW13 P13	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	650 5,000.00	
P12	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	50.10	
MW12	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	650	
P11	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	
TEMM	626	626	626	626	626	626	626	626	649	649	649	649	649	649	649	649	626	626	626	626	626	626	626	626	626	626	626	
P10	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	4,900.01	4,900.01	4,900.01	4,900.01	4,900.01	4,900.01	4,900.01	4,900.01	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	20.97	
OTWIN	625	625	625	625	625	625	625	625	648	648	648	648	648	648	648	648	625	625	625	625	625	625	625	625	625	625	625	
6d	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	4,900.00	4,900.00	4,900.00	4,900.00	4,900.00	4,900.00	4,900.00	4,900.00	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	
6MM	607	607	607	607	607	607	607	607	358	358	358	358	358	358	358	358	607	607	607	607	607	607	607	607	607	607	607	
P8	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	20.96	
MW8	564	564	564	564	564	564	564	564	357	357	357	357	357	357	357	357	564	564	564	564	564	564	564	564	564	564	564	
P7	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	20.95	
<b>NWD</b>	521	521	521	521	521	521	521	521	356	356	356	356	356	356	356	356	521	521	521	521	521	521	521	521	521	521	521	
9d	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	12.77	
MW6	520	520	520	520	520	520	520	520	355	355	355	355	355	355	355	355	520	520	520	520	520	520	520	520	520	520	520	
52	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	10.61	
MWS	436	436	436	436	436	436	436	436	354	354	354	354	354	354	354	354	436	436	436	436	436	436	436	436	436	436	436	
Output	627	626	623	636	628	637	633	634	627	588	540	496	451	407	373	360	357	389	447	502	558	611	623	626	620	624	623	
Time	13:00	13:15	13:30	13:45	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	18:00	18:15	18:30	18:45	19:00	19:15	19:30	



Case 4:14-cv-01111 Document 10-4 Filed in TXSD on 07/14/14 Page 1 of 1

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3	66.6	00.00	00.00	00.00	66.60	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.0C	00.00	00.00
Id	4,99	5,00	5,00	5,00	4,99	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,00	5,0(	5,00	5,00	5,00	5,0(	5,0(	5,0(	5,0(
MWIB	213	213	213	213	212	212	212	212	212	212	212	212	212	211	211	211	212	212	212	212	213	213	213	213	213	213	213	213	214
P12	350.03	350.03	350.03	350.03	350.03	350.03	350.03	350.03	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	350.03	350.03	350.03	350.03	350.03	350.03	350.03	350.03	350.03	350.03	350.03	350.03	350.03
MW12	213	213	213	213	212	212	212	212	212	212	212	212	211	211	211	211	212	212	212	212	213	213	213	213	213	213	213	213	214
TId .	350.02	350.02	350.02	350.02	350.02	350.02	350.02	350.02	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	350.02	350.02	350.02	350.02	350.02	350.02	350.02	350.02	350.02	350.02	350.02	350.02	350.02
mw11	213	213	213	213	212	212	212	212	211	211	211 4	211	210	210	210	210	212	212	212	212	213	213	213	213	213	213	213	213	214
PIO	350.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01	1,900.01	,900.01	10.006,1	10.006,1	10.000,1	1,900.01	10.000,1	1,900.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01
MW10	213	213	213	213	212	212	212	212	210 4	210 4	210 4	210 4	209 4	209 4	209 4	209 4	212	212	212	212	213	213	213	213	213	213	213	213	214
64	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	00.006,	00.006,	,900.006	,900.00	00.006,	00.006,	,900.00	00.006,1	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00
6/M/W	208	208	208	208	207	207	207	207	158 4	158 4	158 4	158 4	158 4	158 4	158 4	158 4	207	207	207	207	208	208	208	208	208	208	208	208	209
P8	75.01	75.01	75.01	75.01	75.01	75.01	75.01	75.01	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	75.01	75.01	75.01	75.01	75.01	75.01	75.01	75.01	75.01	75.01	75.01	75.01	75.01
MW8	208	208	208	208	207	207	207	207	157	157	157	157	157	157	157	157	207	207	207	207	208	208	208	208	208	208	208	208	209
P7	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	23.11	23.11	23.11	23.11	23.11	23.11	23.11	23.11	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
7WM	204	204	204	204	203	203	203	203	156	156	156	156	156	156	156	156	203	203	203	203	204	204	204	204	204	204	204	204	205
94	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	23.10	23.10	23.10	23.10	23.10	23.10	23.10	23.10	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90	22.90
MW6	203	203	203	203	202	202	202	202	155	155	155	155	155	155	155	155	202	202	202	202	203	203	203	203	203	203	203	203	204
PS	22.89	22.89	22.89	22.89	22.89	22.89	22.89	22.89	23.09	23.09	23.09	23.09	23.09	23.09	23.09	23.09	22.89	22.89	22.89	22.89	22.89	22.89	22.89	22.89	22.89	22.89	22.89	22.89	22.89
MWS	176	176	176	176	176	176	176	176	154	154	154	154	154	154	154	154	176	176	176	176	176	176	176	176	176	176	176	176	177
P4	22.88	22.88	22.88	22.88	22.88	22.88	22.88	22.88	23.08	23.08	23.08	23.08	23.08	23.08	23.08	23.08	22.88	22.88	22.88	22.88	22.88	22.88	22.88	22.88	22.88	22.88	22.88	22.88	22.88
MW4	163	163	163	163	163	163	163	163	153	153	153	153	153	153	153	153	163	163	163	163	163	163	163	163	163	163	163	163	163
Output	204	203	203	203	203	203	202	203	206	157	157	157	157	157	157	158	157	203	202	202	203	203	203	203	203	204	203	203	203
Time	13:00	13:15	13:30	13:45	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	18:00	18:15	18:30	18:45	19:00	19:15	19:30	19:45	20:00

SCED Offer Curves for August 12, 2013, for unit HAYSEN\_HAYSENG1

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P13	4,999.99	5,000.00	5,000.00	5,000.000	4,999.99	5,000.00	5,000.000	5,000.00	5,000.00	5,000.00	5,000.000	5,000.00	5,000.00	5,000.00	2,000.000	5,000.00	5,000.001	5,000.00	5,000.00	5,000.000	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.0	5,000.00	5,000.00
<b>MW13</b>	219	219	219	219	218	218	218	218	218	218	218	218	218	219	219	219	219	219	219	219	221	221	221	221	222	222	222	222	224
P12	350.03	350.03	350.03	350.03	350.03	350.03	350.03	350.03	350.03	350.03	350.03	350.03	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00	350.03	350.03	350.03	350.03	350.03	350.03	350.03	350.03	350.03
21WIM	219	219	219	219	218	218	218	218	218	218	218	218	213	213	213	213	214	214	214	214	221	221	221	221	222	222	222	222	224
PIT	350.02	350.02	350.02	350.02	350.02	350.02	350.02	350.02	350.02	350.02	350.02	350.02	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	4,999.99	350.02	350.02	350.02	350.02	350.02	350.02	350.02	350.02	350.02
IIWM	219	219	219	219	218	218	218	218	218	218	218	218	212	212	212	212	213	213	213	213	221	221	221	221	222	222	222	222	224
PIO	350.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01	4,900.01	4,900.01	4,900.01	4,900.01	4,900.01	4,900.01	4,900.01	4,900.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01	350.01
MW10	219	219	219	219	218	218	218	218	218	218	218	218	211	211	211	211	212	212	212	212	221	221	221	221	222	222	222	222	224
6d	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	4,900.00	4,900.00	4,900.00	4,900.00	4,900.00	4,900.00	4,900.00	4,900.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00	350.00
6MM	214	214	214	214	213	213	213	213	213	213	213	213	168	168	168	168	168	168	168	168	216	216	216	216	217	217	217	217	219
<b>P8</b>	75.01	75.01	75.01	75.01	75.01	75.01	75.01	75.01	75.01	75.01	75.01	75.01	22.99	22.99	22.99	22.99	22.99	22.99	22.99	22.99	75.01	75.01	75.01	75.01	75.01	75.01	75.01	75.01	75.01
MW8	214	214	214	214	213	213	213	213	213	213	213	213	167	167	167	167	167	167	167	167	216	216	216	216	217	217	217	217	219
P7	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	22.98	22.98	22.98	22.98	22.98	22.98	22.98	22.98	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
<b>NWM</b>	210	210	210	210	209	209	209	209	209	209	209	209	166	166	166	166	166	166	166	166	212	212	212	212	213	213	213	213	215
96	24.82	24.82	24.82	24.82	24.82	24.82	24.82	24.82	24.82	24.82	24.82	24.82	22.97	22.97	22.97	22.97	22.97	22.97	22.97	22.97	24.82	24.82	24.82	24.82	24.82	24.82	24.82	24.82	24.82
MW6 s	209	209	209	209	208	208	208	208	208	208	208	208	165	165	165	165	165	165	165	165	211	211	211	211	212	212	212	212	214
PS	24.81	24.81	24.81	24.81	24.81	24.81	24.81	24.81	24.81	24.81	24.81	24.81	22.96	22.96	22.96	22.96	22.96	22.96	22.96	22.96	24.81	24.81	24.81	24.81	24.81	24.81	24.81	24.81	24.81
MWS	179	179	179	179	179	179	179	179	179	179	179	179	164	164	164	164	164	164	164	164	180	180	180	180	181	181	181	181	182
P4	24.80	24.80	24.80	24.80	24.80	24.80	24.80	24.80	24.80	24.80	24.80	24.80	22.95	22.95	22.95	22.95	22.95	22.95	22.95	22.95	24.80	24.80	24.80	24.80	24.80	24.80	24.80	24.80	24.80
MW4	164	164	164	164	164	164	164	164	164	164	164	164	163	163	163	163	163	163	163	163	165	165	165	165	165	165	165	165	166
Output	210	210	210	210	215	209	208	209	208	208	214	211	208	167	177	170	168	167	167	167	167	203	211	211	214	212	212	212	212
Time	13:00	13:15	13:30	13:45	14:00	14:15	14:30	14:45	15:00	15:15	15:30	15:45	16:00	16:15	16:30	16:45	17:00	17:15	17:30	17:45	18:00	18:15	18:30	18:45	19:00	19:15	19:30	19:45	20:00

SCED Offer Curves for September 3, 2013, for unit HAYSEN\_HAYSENG4