STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

In the Matter of Eligibility Criteria for Energy Service Companies.	)	**Case 15-M-0127**
Proceeding on the Motion of the Commission to Assess Certain Aspects of the Residential and Small Non-Residential Retail Energy Markets in New York State.	)	**Case 12-M-0476**
In the Matter of Retail Access Business Rules.	)	**Case 98-M-1343**

DIRECT TESTIMONY OF

GUY SHARMAN

ON BEHALF OF

DIRECT ENERGY SERVICES, LLC, DIRECT ENERGY BUSINESS, LLC, DIRECT ENERGY BUSINESS MARKETING, LLC AND GATEWAY ENERGY, LLC (COLLECTIVELY "DIRECT ENERGY")

SEPTEMBER 15, 2017

Case 15-M-0127

DIRECT TESTIMONY OF GUY SHARFMAN

SECTION I.

INTRODUCTION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Guy Sharfman. My business address Suite 680, 15600 John F Kennedy Boulevard, Houston, TX 77060.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Direct Energy Services, LLC, Direct Energy Business, LLC, Direct Energy Business Marketing, LLC and Gateway Energy Services Corporation (collectively, "Direct Energy").

Q. What is your current position?

A. I am a Managing Director at Intelometry, Inc. ("Intelometry"). Intelometry is an energy systems, data and consulting company that specializes in the deregulated energy industry. I am currently the head of Intelometry's data services business which encompasses the development, collection, maintenance and distribution of retail energy data and market reports. I also manage Intelometry's consulting services business which specializes in retail energy market operations, market strategy and regulation.

Q. Please summarize your educational background and professional experience.

A. I received a B.A. degree in economics from the University of Illinois at Urbana/Champaign in 1994, and an M.A. in economics from DePaul University at Chicago in 1998. From 1998 to 2000, I was employed as a Consultant for Analytical Support Network, Inc. ("ASNI"), a firm specializing in regulatory and economic consulting in the electricity industry. During my time at ASNI I became involved in energy deregulation, providing support for various cases before state commissions, assisting energy retailers with product structuring and pricing related issues, and working with consumer groups looking to participate in deregulation. In 2000, I became Manager of Electric Services for Nicor Energy Services, L.L.C. in Lisle, Illinois. In that position, I managed the power-pricing desk, negotiated power supply agreements with wholesalers, developed electric retail service capabilities for the company in various Illinois, Michigan, and Ohio utility service territories, and structured mass-market and individualized retail power products. In 2001, I took a position with Enron Energy Services where I managed Enron's retail commodity positions in the Midwest region. My responsibilities at Enron included buying and selling power, creating and maintaining retail power forward curves for various utility service territories, developing Enron's capability to serve retail load in new markets, as well as assisting regulatory affairs in various matters. In 2002,

I took a position with Econ One Research, Inc, a company specializing in energy economics and litigation. My duties at Econ One included consulting on wholesale, retail, and regulatory matters to energy companies, governmental bodies, as well as end users. I joined Intelometry in 2004. My Curriculum Vitae is attached as Exhibit ____ (GS-1).

SECTION II

PURPOSE OF TESTIMONY AND GENERAL CONCLUSIONS

Q. What is the purpose of your testimony?

A. I have been asked to assess and comment on data submitted by New York utilities in response to the New York Department of Public Service ("DPS") Staff ("Staff") information requests DPS 1-1 and DPS 1-4. In addition, I have been asked to analyze how retail electric offers posted on New York's power to choose website have compared historically to utility tariff rates.

Q. Please summarize your conclusions.

A. My conclusions are the following:

1) **Price comparisons between ESCOs and utilities are inappropriate.** Staff information requests DPS 1-1 and DPS 1-4 asked for inappropriate comparisons between ESCO bills for fixed, variable and value added products and utility variable default

service bills. The comparisons are inappropriate because ESCO bills encompass a basket of products that provide price certainty, price transparency and value added services while utility default variable service rates provide none of these things. Further, data responses to DPS 1-1 and DPS 1-4 contain data for only a limited time frame and contain numerous data issues. As such, the usefulness of these data responses in accurately assessing the state of the New York retail energy market is limited.

2) **Shopping is widespread.** Notwithstanding their limited usefulness, data responses to DPS 1-4 do show that many New York mass-market customers are choosing to take supply from many ESCOs operating in the New York market. Further, the data suggests that ESCOs operate independently and are not colluding on prices.

3) **Active shoppers can save money.** A comparison of ESCO and utility bill rates derived from DPS 1-4 data responses shows that weighted average utility bill rates are often higher than the lowest ESCO bill rate and, in some cases, exceed the weighted average of ESCO bill rates. This result indicates that, in addition to providing price certainty, price transparency and value added services, ESCO products can also provide savings. Comparisons of New York utility residential default variable tariff prices to ESCO clean variable and 12-month fixed offers posted on New York's power to

choose website for the period of 2011 through 2016 also indicate that residential customers could have achieved substantial savings had they actively shopped.

4) **Utility bill rates are a poor benchmark for evaluating ESCO charges.** A comparison of utility default service bill rates across utilities based on DPS 1-4 data demonstrates that:

   a. **Utility customers remain exposed to rate shock.** Customers taking service under utility default rates have experienced periods of rate shock and many months of significant price movement in the 2014 through 2016 period analyzed for this testimony. As such, it is apparent that ESCO fixed price options provide benefits to New York mass-market customers.

   b. **Utility rates vary substantially between utilities.** Despite providing the same standard variable service, electric default service rates to mass-market customers are priced differently across New York utilities. As such, it cannot be argued that New York utilities collectively establish a benchmark for retail pricing to mass-market customers.

Q. How is your testimony structured?

A. The remainder of my testimony is comprised of the following sections:

- Section III summarizes the data submitted in response to DPS 1-1 and DPS 1-4, discusses the many issues identified with this data and explains the analysis I performed using this data.
- Section IV demonstrates that, despite the data issues discussed in Section III, analysis derived from data responses to DPS 1-4 combined with data from New York's power to choose website can be used to draw select conclusions in regards to the New York retail energy market for mass-market customers.
- Section V compares ESCO and utility weighted average bill prices derived using data responses to DPS 1-4 and illustrates that weighted average utility bill rates were higher than the lowest ESCO bill rate in the overwhelming majority of cases and exceed the weighted average of ESCO bill rates in many instances.
- Section VI compares utility default service bill prices and illustrates that, despite providing the same standard default service to mass-market customers, utilities price electric default service rates differently. This section further illustrates the pitfalls of utility default service rates to mass-market customers by illustrating the large bill price spikes that can occur with this service.

- Section VII compares historical electric New York utility default variable tariff prices to ESCO variable and fixed product offers posted on New York's power to choose website for the period of 2011 through 2016. The analysis illustrates that residential customers could have realized substantial savings had they actively shopped during this period.

SECTION III

DATA RESPONSES TO DPS 1-1 AND DPS 1-4 CONTAIN ISSUES

Q. What information did Staff ask New York utilities to provide as part of DPS 1-1?

A. DPS 1-1 was an information request sent by staff to Central Hudson Gas & Electric Corp. ("Central Hudson"), Consolidated Edison Company of New York, Inc. ("ConEd"), Orange & Rockland Utilities, Inc. ("O&R"), National Fuel Gas Distribution Corp. ("NFGD"), Brooklyn Union Gas Co. ("KEDNY"), KeySpan Gas East Corp. ("KEDLI"), and Niagara Mohawk Power Corp. ("NGRID NMPC" or "NMPC") d/b/a National Grid ("NGRID"), New York State Electric & Gas Corp. ("NYSEG") and Rochester Gas and Electric Corp ("RGE") asking for the following:

For each month of 2011 through 2016, provide for each ESCO Company the aggregate of the following: the number of customers, the actual ESCO bill amount for those customers, the comparative utility

bill amount (what those ESCO customers would have paid as customers of the incumbent utility) and the difference between the actual ESCO bill and the comparative utility bill amounts (ESCO bill – Utility bill). If data prior to 2014 is not readily available, provide explanation of the additional time and resource commitment necessary to fully respond and otherwise provide the requested 2014 through 2016 data.[1]

Q. Did all New York utilities provide 2011 through 2016 data in response to DPS 1-1?

A. As best I can determine from analyzing the data sets I was provided, the answer is no. Central Hudson did not provide data in response to DPS 1-1. NYSEG and RGE only provided data for 2016. NGRID and O&R provided data from 2014 through 2016. Only ConEd provided data for the entire 2011 to 2016 period. While NFGD did not provide a response to DPS 1-1, the utility's response to DPS 1-4 did span the full 2011 through 2016 period.

Q. What did Staff ask New York utilities to provide as part of DPS 1-4?

A. DPS 1-4 expanded on DPS 1-1, asking New York utilities to provide account specific data for 2014 through 2016. More specifically the information request asked for the following:

[F]or each month for the years 2014, 2015 and 2016, provide the following for each customer served by an ESCO:

a. the Year;

[1] See Exhibit ___ (GS-2).

b. the Month;

c. Date of Beginning of Bill Period;

d. Date of End of Bill Period;

e. the Customer Class (Residential – Electric, Residential – Gas, Low Income – Electric, Low Income Gas, Small Commercial – Electric, or Small Commercial – Gas);

f. the Actual ESCO Bill;

g. the ESCO Code;

h. the ESCO Name;

i. a unique Customer Identifier which masks the customer's identity;

j. the Comparative Utility Bill;

k. the Total Bill Difference (Actual ESCO - Comparative Utility);

l. the Actual ESCO Commodity Bill Portion;

m. the Comparative Utility Commodity Bill Portion;

n. the Commodity Bill Difference (Actual ESCO Commodity - Comparative Utility Commodity);

o. the Usage;

p. the Volume Type;

q. whether that usage was Estimated or Actual Usage;

r. the Monthly Usage Rate;

s. ISO Zone (if applicable, if not LEAVE BLANK WITH NO SPECIAL CHARACTERS); and

t. the Billing Zip Code;[2]

Q. Does it makes sense that DPS 1-1 asked for data from 2011 to 2016 and DPS 1-4 only asked for data for 2014, 2015 and 2016?

A. No. If the analysis period in question is supposed to be 2011 through 2016 then all data provided should be for 2011 through 2016. It makes little sense to apply a different standard to one year in the analysis period over another.

Q. Did all New York utilities provide a complete response to DPS 1-4?

A. As best I can determine from analyzing the data sets I was provided, the answer is no. ConEd, O&R and NGRID did not provide commodity only bill amounts either for the ESCO or utility side. These utilities only provided bundled bill amounts where commodity and delivery bills were combined into one number. Further, O&R Gas did not provide bill records for ESCOs serving commercial customers from January, 2014 through September, 2015. Finally, NYSEG Electric did not provide ESCO bill records for December, 2015.

Q. Are commodity only bills essential to analyzing the New York retail market?

A. Yes. Delivery service rates are still regulated and ESCOs have no power to set them. As such, it is commodity rates that should be primarily looked at when assessing the New York retail energy market.

[2] See Exhibit ____ (GS-2).

Q. Can you briefly explain the nature of the DPS 1-1 and 1-4 data sets you've reviewed and the process by which you went through to analyze them?

A. Since DPS 1-1 data did not provide individual customer bill records or commodity only bill rates, most of my focus was on analyzing DPS 1-4 data responses. A list of all the DPS 1-1 and DPS 1-4 data response files I reviewed are attached to this testimony as Exhibit ____ (GS-3).

The DPS 1-4 utility data files were processed into separate SQL server ("SQL") tables that allowed for a more in depth analysis. A table was created for each utility because of the inconsistencies in the file formats between utilities. This process was time consuming and labor intensive for two reasons. First, data files were extremely large, encompassing millions of bill records for each set of files. Second, the data trickled in at a slow pace and updated file sets replaced older file sets, requiring SQL tables to be recreated each time.

In total, I analyzed 79,122,916 records; 1,240,728 bill records for Central Hudson electric and gas, 29,682,743 bill records for ConEd electric and gas, 3,206,626 bill records for NFGD, 2,225,923 bill records for KEDLI, 8,579,957 bill records for KEDNY, 15,364,840 bill records for NGRID NMPC electric and gas, 7,962,986 bill records for NYSEG electric and gas, 5,446,493 bill records for O&R electric and gas and 5,412,620 bill records for RGE electric and gas.

Q. Notwithstanding issues with data completeness did you find other issues with DPS 1-4 data responses?

A. Yes. DPS 1-4 asked New York utilities to calculate a delta between actual historical ESCO bill amounts and hypothetical utility default service tariff bills derived by each utility for the same customer and bill period. This analysis is arbitrary.

Q. Please elaborate.

A. New York utility commodity default tariffs for service to mass-market customers all encompass variable rates that change monthly. These rates do not provide price transparency, price certainty or any other value added services. Conversely, ESCOs offer many different types of fixed and variable products to mass-market customers that incorporate varying contract lengths and value added service options. Exhibit ___ (GS-4) provides data from New York's power to choose website that shows the many different products offered by ESCOs to New York residential customers between June, 2010 and July, 2017. As illustrated by the exhibit, ESCOs have provided ninety different types of fixed and fifty-one different types of variable electric products along with sixty-four different types of fixed and forty-one different types of variable gas products to residential customers during this analysis timeframe. These products offer price transparency and price certainty for up to 60 months along with value added services such as green options and cash rewards.

Q. What do you mean by price transparency?

A. I define a retail electric or gas price to be transparent when the customer knows the per unit price (either in $ per kWh, $ per Therm or $ per CCF) they will be paying for the commodity prior to receiving a bill. ESCOs provide price transparency by posting fixed and variable per unit price offers for a given product on the New York power to choose website or in their service agreements.

New York utility variable default commodity service rates do not provide price transparency to mass-market customers. The full per unit commodity default tariff price is computed during the billing period so customers don't know the full per unit rate they will be paying until they receive their bill.

Q. What do you mean by price certainty?

A. I define a retail electric or gas price to be price certain when the price of the commodity does not fluctuate, regardless of changes in market, business or competitive conditions, or other factors affecting the entity supplying the commodity. ESCO fixed price contracts provide price certainty by fixing the per unit price for a mass-market customer for the term of their contract. According to data from New York power to choose, this term can be for up to 60 months.[3]

New York utility variable default rates do not provide price certainty to mass-market customers. These rates change monthly, and, in some cases, can change significantly without warning.

[3] See Exhibit ___ (GS-4).

Q. What do you mean by value added service?

A. I define a value added service as a benefit obtained from a retail energy product that extends beyond the required core energy service. For example, a product that provides a higher percentage of green energy than the minimum required by law, a product that provides an additional non-energy benefit such as cash rewards, or a product that makes the customer experience easier or better. Importantly, in a properly functioning market, each consumer gets to define what is valuable to themselves..

Q. Given the differences between ESCO products and utility default service rates what is the issue with comparing the ESCO and utility bill prices provided in the New York Utilities' responses to DPS 1-1 and DPS 1-4?

A. The New York Utilities' responses to DPS 1-1 and DPS 1-4 presented ESCO bill data for many different ESCO products and contract lengths without identifying which ESCO product and contract is associated with any bill record. Per Staff's request, the data responses then draw comparisons between unidentified ESCO products and associated contracts and utility variable tariff rates. These comparisons are invalid.

Q. Why do you say the comparisons are invalid?

A. ESCO products and utility products are very different. New York mass-market customers actively choose to take service from ESCOs via products and terms tailored to their needs. Drawing simple comparisons between utility default variable tariff rates and these ESCO products

ignores the reasons why customers contract with ESCOs in the first place. For example, a residential customer that signs with an ESCO to receive a 12-month fixed price presumably does so to avoid market price fluctuations for the contract term. Drawing a simple comparison between that customer's fixed price and a utility's variable tariff rate six months down the road without acknowledging that the customer actively chose to take service under a fixed price contract would be misleading. Say the utility variable tariff rate was lower than the customer's fixed price at the six-month mark. A simple comparison would imply the customer was worse off for choosing price certainty when in truth the customer may be perfectly happy taking ESCO service. This would be like claiming that someone who bought car insurance and didn't get into an accident is worse off for opting to buy that insurance. Yet, this is what's implied when comparing utility variable tariff rates to ESCO products.

Further, ESCO products offer value added services such as green products. Utility default variable commodity rates did not contain green provisions until 2017. If a customer is willing to pay extra to help the environment it would be erroneous to suggest the customer is worse off because the applicable utility's default tariff rate might be cheaper in any given month.

Q. You said ESCOs also offer variable rates. Is it appropriate to compare those rates to utility default variable service rates?

A. No. ESCO variable products differ from utility variable tariff rates in several ways. First, ESCOs post one month variable rate offers where

mass-market customers know the rate they will be paying for the month prior to signing with the ESCO. Utility rates are always at least partially backward looking so mass-market customers don't have the same preview to their bill. While longer term ESCO variable price offers may only show customers the price for the first month of the term and are therefore less transparent, customers actively choose and contract for such offers. Utility variable tariff rates are simply mandated when a customer does not actively shop.

Second, as illustrated in Exhibit ____ (GS-2), posted ESCO variable products include value added services such as variable green, guaranteed savings and cash rewards products, which utility variable service rates do not offer.

Q. What about cases where ESCOs actively transition customers to ESCO variable rates after their contracts expire?

While in such cases the ESCO price is not certain or transparent, it still differs from utility default service rates in two ways. First, utilities recuperate default service costs on a portfolio basis after the fact, meaning the utility adjusts the price all customers receive with an underlying change to cost structure. Simply put, the utility takes little risk and variable cost recovery is socialized across customers. ESCOs, on the other hand, must continue to honor prices to existing customers under contract when they move a customer to variable priced service after their contract expires. Second, an active shopper can always contact the ESCO

and contract for a new price certain fixed or variable product, thereby avoiding this scenario altogether.

Q. Did you find any other issues with utility data responses to DPS 1-4?

A. Yes. In addition to the missing and incomplete data previously discussed I found that many of the data records were suspect and since the underlying work papers used to compile this data were not provided I question at least some of the data's validity.

Q. What do you mean by suspect records?

A. I found many records where bill amounts did not make sense in relation to the customer type and usage information associated with the record. This problem was particularly prevalent for NYSEG, RGE, KEDLI and KEDNY. For example, I found a data record where the derived monthly utility commodity bill for a residential low income customer was $241.08 and the corresponding ESCO bill was $3,288,144. Exhibit ____ (GS-2) provides more examples of such data records. Obviously, this data record is faulty since a residential customer would not have incurred a $3.2 million ESCO bill for home use. However, I was only able to identify it because it is an extreme case. I have no way of knowing if less extreme cases are necessarily correct. As such, I do have to question the data's validity.

Q. Did you find any other issues with the data?

A. Yes. There were many records containing zero or negative bill and usage data. This is not to say that such records are incorrect, but I do question

what value such records add even if they are correct. Also, I found many data records for KEDLI, KEDNY and NMPC where the start and end date of the record period did not correspond to the bill period. For example, I found a KEDNY bill record with a start date of 2/4/2010, an end date of 2/28/2010 and a corresponding bill month and year of June, 2015. Obviously, there is an issue with this record. Finally, the totals in utility data responses to DPS 1-1 and DPS 1-4 did not always tie out.[4]

Q. What do you conclude regarding utility data responses to DPS 1-1 and 1-4?

A. The data responses, for the most part, do not encompass the full 2011 to 2016 analysis period sought by Staff and some responses lack key DPS 1-4 data for 2014, 2015 and 2016. Further Staff's DPS 1-1 and 1-4 asked for inappropriate comparisons between ESCO fixed, variable and value added products actively contracted for by customers and utility default variable service rates, which is an arbitrary comparison. Finally, no work papers were provided for the data and there are many data anomalies which have not been properly explained. As such, I would caution against using this data as a basis to set New York retail energy market policy.

SECTION IV

MANY BUYERS AND SELLERS OPERATING INDEPENDANTLY

[4] See Exhibit ___ (GS-5).

Q. Despite the data issues you identified, are there any noteworthy observations you can make from utility data responses to DPS 1-4?

A. Yes. Despite the issues identified, DPS 1-4 data responses do suggest that a functioning retail energy market exists in New York for mass-market customers in two ways. First, the data indicates that there are many buyers and many sellers operating in the New York energy retail market across all utility service areas for both electric and gas. Second, the data shows a large spread of ESCO bill prices to mass-market customers. This large spread in ESCO bill prices is particularly noteworthy since it embodies the many ESCO product and contracting options available to New York mass-market customers. It also suggests that ESCOs are operating independently and are not colluding with each other on price.

Q. Can you elaborate on what you mean by many buyers and many sellers?

A. DPS 1-4 data responses show that from January, 2014 through December, 2016 as many as 43 ESCOs supplied electricity in Central Hudson, 85 ESCOs supplied electricity in ConEd, 63 ESCOs supplied electricity in NGRID NMPC, 56 ESCOs supplied electricity in NYSEG, 60 ESCOs supplied electricity in O&R, and 54 ESCOs supplied electricity in RGE. The data also shows that as many as 29 ESCOs supplied gas in Central Hudson, 86 ESCOs supplied gas in ConEd, 44 ESCOs supplied gas service in NFGD, 72 ESCOs supplied gas in KEDLI, 83 ESCOs supplied gas in KEDNY, 48 ESCOs supplied gas in NGRID NMPC, 38 ESCOs

supplied gas in NYSEG, 45 ESCOs supplied gas in O&R, and 39 ESCOs supplied gas in RGE. [5]

On the buyer side, the data shows that, from January, 2014 through December, 2016, 659,619 unique customer accounts took ESCO service in Central Hudson, 1,285,778 accounts took ESCO service in ConEd, 136,016 accounts took ESCO service in NFGD, 1,445,955 accounts took ESCO service across NGRID utilities, 414,764 accounts took ESCO service in NYSEG, 201,075 accounts took ESCO service in O&R, and 242,359 accounts took ESCO service in RGE.

Q. How did you calculate a spread of ESCO bill prices from DPS 1-4 data?

A. Since utility data responses to DPS 1-4 included millions of bill records, I first had to convert this data into something more manageable. Using the SQL tables created to house each utility's individual account bill records, a weighted average bill was calculated for each ESCO grouped by utility, commodity, customer class, and month for the period of 2014 through 2016. A weighted average bill was also calculated for each utility grouped by commodity, customer class, and month for the same period. The exercise involved calculating weighted average commodity-only bill prices for Central Hudson, NFGD, NYSEG and RGE, since they made commodity-only bill price data available. Weighted average total bill prices were calculated for ConEd, NGRID utilities, and O&R. Performing

[5] See Exhibit ___ (GS-6).

this exercise reduced the total number of records to be analyzed from 79,122,916 to 83,968, which was more manageable.

Next, questionable records were removed from the new record count. I defined questionable records as the following:

- Records where the ESCO weighted average price in dollars per kWh was less than zero.
- Records where total customer usage was zero.
- Records where the utility weighted average bill price was five times or more the matching ESCO weighted average bill price.
- Records where the ESCO weighted average bill price was five times or more the matching utility weighted average bill price.
- Records where the ESCO weighted average price was greater than $500 per MWh or $5 per kWh.
- Records where the ESCO weighted average price was greater than $5 per Therm.
- Records where the ESCO weighted average price was greater than $5 per CCF.

In total, 990 records were removed leaving a total of 82,978 records to be analyzed.

A table and associated graph were then prepared for each set of ESCO weighted average prices. Each table denotes the minimum ESCO weighted average bill price, the average of ESCO weighted average bill prices and the ESCO count derived for each month. Each graph plots all

ESCO weighted average prices by month. These tables and graphs are provided as part of Exhibit ___ (GS-6).

Q. Why did you remove the additional 990 records?

A. I removed records where the ESCO weighted average price was negative or the customer usage was zero because I felt these were, at best, anomalies that did not represent the market at large and would skew analysis results. I removed records where either the ESCO or utility bill price was five times or more the matching price for two reasons. First, as previously stated, I did not have the work papers or underlying data used to produce utility responses to DPS 1-4 and this data seemed suspect. Second, this data represented a small handful of outliers which I did not believe represented the market at large. I removed records where the ESCO weighted average price was greater than $500 per MWh, $5 per Therm and $5 per CCF for the same reason. In total, only 1.2% of the remaining records were removed.

Q. What does your analysis results show?

A. The analysis shows a wide range of ESCO bill prices by utility and customer type for each month of the analysis. This large spread suggests that ESCOs are operating independently and no market-wide price collusion is occurring. Further, the wide spread in bill prices implies that many product and contract options are available to mass-market customers in New York. This implication is further supported by the numerous

electric and gas ESCO product offerings posted on the New York power to choose website.[6]

Q. Wouldn't you expect pricing in a competitive market to be driven down to marginal costs, thereby limiting the spread in ESCO bills?

A. As previously noted, ESCO bill data provided by New York utilities in response to DPS 1-4 encompassed many different ESCO products and contract lengths without identifying the ESCO product, product definition or contract length associated with each bill record. Further, some utilities only provided bundled bill data that combined both commodity and delivery bills into one value. As such, I simply do not have the data to comment on any bill record's relationship to marginal cost.

SECTION V

COMPARISON OF UTILITY AND ESCO BILLS

Q. Did you perform any other analysis on utility data responses to DPS 1-4?

A. Yes. Using DPS 1-4 data I calculated the utility weighted average bill price by commodity and customer class for each month in the 2014 through 2016 period for which data was available. I then compared each utility weighted average bill price to the average of weighted average ESCO bill prices as well as the lowest weighted average ESCO bill price.

[6] See Exhibit ___ (GS-4).

The analysis results are provided in Exhibit ___ (GS-7). This exhibit tracks commodity bill prices for Central Hudson, NFGD, RGE and NYSEG and bundled bill prices for ConEd, O&R and NGRID utilities.

Q. What does this analysis show?

A. For electric utilities, the data generally shows that utility bill prices in parts of 2014 were higher than the average of ESCO weighted average prices and fell between the average and lowest ESCO weighted bill price in 2015 and 2016. The data differed by utility and customer class.

Q. How does the data differ by utility and customer class?

A. *Central Hudson*

Central Hudson default service bill prices were the highest in February through April of both 2014 and 2015. For low income and residential customers these prices never rose above the ESCO average, although they were most often higher than the ESCO minimum price. Central Hudson small commercial default service bill rates did rise above the ESCO average in both the 2014 and 2015 peak periods.

ConEd

ConEd default service bill prices for residential and small commercial customers were higher than the ESCO minimum in all months of the analysis. ConEd default service prices for low income customers were higher than the minimum ESCO price in all months except for December, 2015. ConEd default service bill prices for low income and residential customers were higher than the ESCO average in January and February of

2014. ConEd default service bill prices for small commercial customers were higher than the ESCO average in 9 months in 2014, in 6 months in 2015 and in 2 months in 2016.

NMPC

NMPC default service bill prices for low income and small commercial customers were higher than the ESCO minimum in all months of the analysis. NMPC prices for residential customers were higher than the minimum ESCO price in all months except for April, 2014. NMPC prices for all customer classes were higher than the ESCO average in March of 2014, while the Small Commercial price was also higher than the ESCO average in January of 2014.

NYSEG

NYSEG's December, 2015 bill data was missing for all customer classes. The data that was provided showed that NYSEG default service bills were higher than the ESCO average in April and May of 2014 for low income customers, in April and May of 2014 and November of 2016 for residential customers and in April, May and June of 2014 for small commercial customers. The NYSEG bill price hovered between the ESCO average and the ESCO minimum for most of the remaining months. Noted exceptions are March, 2015 where the NYSEG price drops below the ESCO minimum price for residential and small commercial customers, April, 2015 where the NYSEG price drops below the ESCO minimum for

all customer classes and June, 2016 where the NYSEG price drops below the ESCO minimum for small commercial customers.

O&R

O&R weighted average default service bill prices for low income and residential customers were higher than the ESCO minimum in all months of the analysis. O&R prices for small commercial customers were higher than the ESCO minimum in all months except for March, 2015. O&R prices for low income customers were higher than the ESCO average in 10 months of 2014 and 2 months of 2015. They were higher than the ESCO average for 11 months in 2014 and 4 months in 2015 for residential customers and 9 months in 2014 and 2 months in 2015 for small commercial customers.

RGE

RGE bill prices for low income customers were higher than the ESCO minimum in all months of the analysis. RGE default service prices for residential and small commercial customers were higher than the ESCO minimum in all months except for March, 2015. RGE default service bill prices were higher than the ESCO average for all customer classes in January, February, April, May and June of 2014.

Q. What does your analysis show for gas utilities?

A. *Central Hudson*

Central Hudson weighted average default service bill prices for small commercial customers were higher than the ESCO minimum weighted

average bill price in all 36 months of the analysis period. Central Hudson prices were also higher than the ESCO minimum in all but 4 months for residential customers and in all but 6 months for low income customers. Central Hudson prices were higher than the ESCO average in March through August of 2014 for the residential and low income classes and March through September of 2014 for the small commercial class.

ConEd

ConEd weighted average bill prices for low income customers tracked very closely to the ESCO average and were significantly above the ESCO minimum in all months. ConEd low income prices also exceeded the ESCO average in March, May, June and July of 2014 and May through October of 2016. ConEd prices for residential customers were also above the ESCO minimum in every month of the analysis period and small commercial customer prices were higher than the ESCO minimum in all months except for March, 2015.

NFGD

NFGD default service bill prices tracked closely to the ESCO minimum for all classes, but were only lower than the ESCO minimum price in 10 out of the 36-month analysis period for low income customers, in 9 months for residential customers and in 3 months for small commercial customers.

KEDLI

KEDLI default service bill prices for all customer classes were higher than the ESCO minimum in all months of the analysis. In all months, the KEDLI price hovered between the ESCO average and the ESCO minimum for all customer classes.

NMPC

NMPC weighted average bill prices were higher than the ESCO minimum in every month of the analysis period. NMPC bill prices were higher than the ESCO minimum in 31 out of the 36 for low income customers and 32 out of 36 months for small commercial customers.

NYSEG

NYSEG weighted average bill prices were higher than the ESCO minimum in every month save one for low income customers and every month save two for residential and small commercial customers. NYSEG bill prices were also higher than the ESCO average in January and February of 2014 for all classes.

O&R

O&R weighted average bill prices for residential customers were higher than the ESCO minimum in all months of 2014 and 2015 and in all but two months of 2016. O&R bill prices for low income customers were higher than the ESCO minimum in all 2014 months except for December and in all 2016 months except for February and March. In 2015 O&R bill prices for low income customers where higher than the ESCO minimum in

seven out of twelve months. O&R bill prices for low income and residential customers were higher than the ESCO average in February and March of 2014.

I was only able to extract O&R small commercial customer bill data for October, 2015 through December of 2017. During this period the O&R weighted average bill price was higher than the ESCO minimum in seven months.

RGE

RGE bill prices for low income customers were higher than the ESCO minimum in all but one month of the 36-month analysis period. For residential customers, RGE bill prices were higher than the ESCO minimum in all but 5 months. For small commercial customers, ESCO minimum bill prices were above the utility's default service price in only 11 out of the 36-month analysis period.

Q. What do these results suggest?

A. These results suggest that, in addition to providing benefits to mass-market customers that utility default service rates do not, such as price transparency, price certainty and value added services, ESCO products can also yield savings to customers that actively shop. This assertion is further supported by analysis results discussed in Section VII of this testimony.

SECTION VI

ANALYSIS OF UTILITY DEFAULT SERVICE BILL PRICES

Q. Do you have any further comments regarding the weighted average utility default service prices you analyzed?

A. Yes. The movement of utility default service bill prices across time, particularly on the electric side, was not uniform among the New York Utilities, even though this service provides an identical value to all utility customers. This essentially means that utility hedging and pricing practices are not uniform across New York. Further, I noticed cases of extreme utility bill price hikes form the previous month and many months of significant utility bill price movement from the previous month across all utilities.

Q. Since New York electric utilities serve customers across New York ISO zones, do the differences in tariff price movement simply reflect the movement of the New York wholesale market?

A. No. Exhibit ___ (GS-8) tracks NYISO average Day Ahead and Real Time LBMP prices from 2014 through 2016 for all NYISO zones as well as NYISO strip and spot auction clearing prices for capacity. Although there are price differences between zones, these prices generally move together across time. Electric utility bill data derived from DPS 1-4 data responses does not show the same uniformity.

Q. How did utility default service bill prices move differently across time?

A. Exhibit ___ (GS-9) tracks the movement of utility weighted average default service bill prices in comparison to one another based on utility responses to DPS 1-4. The exhibit graphs the movement of utility default service bill prices by commodity and tracks utilities that provided commodity only bill data separately from the utilities that did not. For electric, Central Hudson, NYSEG and RGE are tracked on the commodity only graph, while ConEd, NMPC and O&R are tracked on the total bill graph. For gas, Central Hudson, NFGD, NYSEG and RGE are tracked on the commodity only graph, while ConEd, KEDLI, KEDNY, NGRID and O&R are tracked on the total bill graph. Separate graphs were prepared for each customer class.

For electric, the commodity only graphs show that utility weighted average default service prices all escalated or declined on the same month in only 6 to 7 months out of the 36-month analysis period depending on customer class, meaning that prices for the three utilities moved together only about 18% of the time.

The full-service graphs show that utility weighted average default service prices all escalated or declined on the same month in only 9 to 13 months out of the 36-month analysis period depending on customer class, meaning that prices for the three utilities moved together only about 30% of the time. On the gas side, the commodity-only graphs show that utility

weighted average default service prices all escalated or declined on the same month in only 15 to 16 months out of the 36-month analysis period depending on customer class, meaning that prices for the four utilities moved together only about 43% of the time. The full-service graphs show that utility weighted average default service prices all escalated or declined on the same month in only 21 to 22 months out of the 36-month analysis period depending on customer class, meaning that prices for the four utilities moved together only about 60% of the time.

Q. What is the significance of the variation in default service pricing across utilities?

A. All New York utilities provide the same standard default service to mass-market customers that does not provide price certainty, price transparency or value added services. Yet, utilities price their rates differently. This means that there is no statewide benchmark for pricing utility default service rates to mass-market customers, just as there is no benchmark for ESCO service. Further, while New York utilities do partially hedge their load, which may explain some of the variation in pricing, utility default service prices to mass-market customers still fluctuate monthly, and significantly so in many cases.

ESCOs, on the other hand, offer full hedges to customers through fixed price products as well as offer products that provide price transparency and value added services. As such, a wide spread in historical ESCO bill prices is not surprising.

Q. Did you find anything else noteworthy in your assessment of utility default service bill rates?

A. Yes. The analysis showed cases of extreme utility default service price changes for all customer types. This means that customers taking default service from their respective utility would have experienced instances of rate shock between 2014 and 2016. Exhibit ___ (GS-10) flags all months where the utility per unit rate changed by 10% or more for utilities that provided commodity only bills and 5% or more for utilities that provided full service bills.

Q. Why did you have a different threshold for utilities that only provided full service bills?

A. Delivery service costs are a significant part of the total retail energy bill (commodity plus delivery services) in New York. As such, the percentage impact of a large change in the commodity bill rate on the total energy bill would be significantly less than the percentage impact on the commodity only bill.

Q. What did the analysis show in terms of extreme price changes for mass-market customers?

A. *Electric, Commodity Only, Low Income*

The analysis showed that in the 36-month analysis period, weighted average utility default service bill prices for low income customers changed by 10% or more in 21 months for Central Hudson, in 22 months for NYSEG and in 21 months for RGE. In the most extreme case the

weighted average utility bill price rose 69% in a single month for Central Hudson, 135% in a single month for NYSEG and 58% in single month for RGE.

Electric, Commodity Only, Residential

The analysis showed that in the 36-month analysis period, weighted average utility bill prices for residential customers changed by 10% or more in 20 months for Central Hudson, in 23 months for NYSEG and in 21 months for RGE. In the most extreme, case the weighted average utility bill price rose 72% in a single month for Central Hudson, 132% in a single month for NYSEG and 59% in single month for RGE.

Electric, Commodity Only, Small Commercial

The analysis showed that in the 36-month analysis period, weighted average utility bill prices for small commercial customers changed by 10% or more in 21 months for Central Hudson, in 25 months for NYSEG and in 21 months for RGE. In the most extreme case the weighted average utility bill price rose 65% in a single month for Central Hudson, 149% in a single month for NYSEG and 64% in single month for RGE.

Electric, Total Bill, Low Income

The analysis showed that in the 36-month analysis period, weighted average utility bill prices for low income customers changed by 5% or more in 6 months for ConEd, in 17 months for NMPC and in 16 months for O&R. In the most extreme case the weighted average utility bill price

rose 14% in a single month for ConEd, 38% in a single month for NMPC and 36% in a single month for O&R.

Electric, Total Bill, Residential

The analysis showed that in the 36-month analysis period, weighted average utility bill prices for residential customers changed by 5% or more in 7 months for ConEd, in 11 months for NMPC and in 16 months for O&R. In the most extreme case the weighted average utility bill price rose 13% in a single month for ConEd, 34% in a single month for NMPC and 37% in a single month for O&R.

Electric, Total Bill, Small Commercial

The analysis showed that in the 36-month analysis period, weighted average utility bill prices for small commercial customers changed by 5% or more in 16 months for ConEd, in 12 months for NMPC and in 21 months for O&R. In the most extreme case the weighted average utility bill price rose 14% in a single month for ConEd, 31% in a single month for NMPC and 48% in a single month for O&R

Gas, Commodity Only, Low Income

The analysis showed that in the 36-month analysis period, weighted average utility bill prices for low income customers changed by 10% or more in 11 months for Central Hudson, in 8 months for NFGD, in 11 months for NYSEG and in 14 months for RGE. In the most extreme case the weighted average utility bill price rose 34% in a single month for

Central Hudson, 17% in a single month for NFGD, 23% in a single month for NYSEG and 24% in single month for RGE.

Gas, Commodity Only, Residential

The analysis showed that in the 36-month analysis period, weighted average utility bill prices for residential customers changed by 10% or more in 12 months for Central Hudson, in 8 months for NFGD, in 11 months for NYSEG and in 14 months for RGE. In the most extreme case the weighted average utility bill price rose 30% in a single month for Central Hudson, 15% in a single month for NFGD, 23% in a single month for NYSEG and 24% in single month for RGE.

Gas, Commodity Only, Small Commercial

The analysis showed that in the 36-month analysis period, weighted average utility bill prices for small commercial customers changed by 10% or more in 12 months for Central Hudson, in 14 months for NFGD, in 11 months for NYSEG and in 14 months for RGE. In the most extreme case the weighted average utility bill price rose 30% in a single month for Central Hudson, 24% in a single month for NFGD, 23% in a single month for NYSEG and 24% in single month for RGE.

Gas, Total Bill, Low Income

The analysis showed that in the 36-month analysis period, weighted average utility bill prices for low income customers changed by 5% or more in 26 months for ConEd, in 21 months for O&R, in 21 months for KEDLI, in 24 months for KEDNY and in 26 months for NMPC. In the

most extreme case the weighted average utility bill price rose 34% in a single month for ConEd, 21% in a single month for O&R, 33% in a single month for KEDLI, 34% in a single month for KEDNY and 42% in a single month for NMPC.

Gas, Total Bill, Residential

The analysis showed that in the 36-month analysis period, weighted average utility default service bill prices for residential customers changed by 5% or more in 19 months for ConEd, in 20 months for O&R, in 25 months for KEDLI, in 25 months for KEDNY and in 29 months for NMPC. In the most extreme case the weighted average utility bill price rose 23% in a single month for ConEd, 23% in a single month for O&R, 27% in a single month for KEDLI, 30% in a single month for KEDNY and 53% in a single month for NMPC.

Gas, Total Bill, Small Commercial

The analysis showed that in the 36-month analysis period, weighted average utility bill prices for small commercial customers changed by 5% or more in 14 months for ConEd, in 8 months for KEDLI, in 11 months for KEDNY and in 20 months for NMPC. In the most extreme case the weighted average utility bill price rose 15% in a single month for ConEd, 8% in a single month for KEDLI, 11% in a single month for KEDNY and 23% in a single month for NMPC.

I was only able to extract O&R small commercial customer data for October, 2015 through December, 2016 for a total of 15 months. During

that time, weighted average utility bill prices changed by 5% or more in 7 months and rose 14% in the most extreme case.

Q. What are the implications of these results?

A. The results indicate that mass-market customers taking utility default service likely experienced many months of significant price movement during the 2014 through 2016 analysis period. Such price fluctuations can make budgeting difficult, especially since the per unit price is unknown until the customer receives their utility bill. I believe these findings underscore the need for ESCO fixed price products in the New York market.

SECTION VII

UTIITY DEFAULT PRICE V ESCO OFFERS

Q. Did you perform any other analysis regarding the New York retail market?

A. Yes. I compared the lowest "clean" ESCO electric variable and 12-month fixed product offers posted on the New York power to choose website for the period of 2011 to 2016 to electric utility residential default variable tariff rates for the same time-period.

Q. What do you mean by clean ESCO offer?

A. I define a clean ESCO offer as one where both the offer price and term are defined and the offer price does not change at any point throughout the defined term.

Q. What Did your analysis show?

A. The analysis shows that had electric residential customers chosen the lowest clean ESCO variable price offer posted on power to choose each month a typical residential customer would have saved an an average of $123 and $212 per year depending on utility and the total New York wide market savings could have reached over $18 billion.

The analysis further shows that had electric residential customers chosen the lowest clean ESCO 12-month fixed price offer posted on power to choose New York wide market savings could have been over $1.6 billion.

Q. How did you set up your ESCO variable offer analysis?

A. First, I obtained available history of posted electric ESCO offers from New York's power to choose website for the analysis period. This data included ESCO per kWh offer prices and associated details as posted on New York's power to choose website at the time of posting. Offer prices were extrapolated for each utility and applicable NYISO zone. It should be noted that no offer data was available for the period of 11/1/2015 through 6/30/2016. Next, I isolated clean variable ESCO offers from the main data set. I defined an ESCO variable offer as one where the offer

term was one to two months. I then extrapolated the lowest ESCO variable price offer for each month of the analysis period.

Next, I compiled historical monthly residential tariff rates for each utility using historical tariff information obtained from the New York PSC and utility websites. In doing this I was careful to only include by-passable portions of each tariff, meaning I only included tariff charges that a residential customer would bypass had they elected to take generation service from an ESCO.

Finally, I extrapolated reasonable assumptions for both aggregate kWh monthly residential customer load for each utility as well as individual kWh monthly load for a typical residential customer in each utility. An overview of the analysis, components included, assumptions made and analysis results are provided in Exhibit ____ (GS-11).

Q. Please explain the ESCO variable offer savings analysis you ran.

A. For each month in the analysis period, utility and applicable zone I calculated the per unit difference between the applicable default utility tariff price and the lowest ESCO offer. I then multiplied this difference by both the aggregate residential monthly load derived for each utility as well as the load of the typical residential customer in each utility. The results showed the residential monthly savings or loss had the lowest available clean ESCO variable offer been selected each month.

Q. How did your setup vary for the ESCO 12-month fixed offer savings analysis?

A. Opting for a 12-month fixed price offer entails a year commitment on the part of a residential customer so this had to be reflected in the savings analysis. To do this, I assumed that 1/12 of residential electric load in each utility would switch to the lowest clean ESCO 12-month fixed price offer in each month of the analysis period and then remain on that offer price for the next 12 months. At the end of the 12-month period the load tranche would switch to the new lowest available 12-month fixed price offer posted.

The analysis setup first entailed isolating clean 12-month fixed price ESCO offers from the main data set. I defined a clean ESCO 12-month fixed price offer as one where the offer term was 12 months, the fixed price posted did not change during the term and the offer wasn't isolated to a specific group of customers such as active duty military. I then extrapolated the lowest offer from the ensuing data set for each month of the analysis period.

Next, I set up price tranches where the lowest ESCO price offer in each month was held constant for the prevailing 12 months. A savings tranche was then derived by calculating the delta between each 12-month ESCO price and the corresponding set of 12 monthly utility default tariff prices.

Finally, a load tranche corresponding to each savings tranche was extrapolated from the utility residential load data set. Each load tranche

consisted of 1/12 of the total utility residential monthly load in each month of the tranche.

Q. Please explain the ESCO 12-month fixed price offer savings analysis you ran.

A. Each load tranche was calculated against its corresponding savings tranche. A total savings or loss figure was then compiled for each month and utility. Finally, monthly savings or loss values were summed to generate a market wide savings or loss by each year of the analysis period. Results showed a mixed bag of residential savings and losses depending on the utility and year. Overall, however, the analysis indicated that market wide savings would have been over $1.6 billion dollars during the analysis period.[7]

Q. What is the significance of your findings?

A. The variable offer savings analysis demonstrates that informed customers who actively shop throughout the year can achieve a high level of savings by continually monitoring and taking advantage of posted ESCO variable offers. Comparably, the fixed offer savings analysis demonstrates that informed customers who actively shop can achieve long run market savings even when opting for longer term fixed price products.

Q. Does this conclude your testimony?

A. Yes.

[7] See Exhibit ___ (GS-11).