



Technology | Research | Panels  
**Independent Electricity System Operator**  
**2013 Customer Satisfaction Study**  
**February 2014**  
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## Introduction and Overview

Angus Reid Public Opinion is pleased to present this report of the **2013 Customer Satisfaction Study** to the Independent Electricity System Operator (IESO). This report draws on both the quantitative and qualitative research results undertaken as part of the 2013 wave of research. This document also reports data from previous waves of research (where applicable) on IESO client satisfaction in order to monitor and identify emerging trends. Areas where questions have changed or been modified in the tracking analysis are indicated throughout the report.

As in the past waves of the IESO's Customer Satisfaction research program, the quantitative survey was administered online and used the IESO's client list as a sample source. Angus Reid Public Opinion used its proprietary online survey platform Sparq™ to program, deploy and host the survey. In total, 110 customers participated in the online survey out of a total of 520 who were invited to participate. This represents a participation rate of 21 per cent, which is quite strong for surveys of this nature.

As a follow-up to the quantitative portion of the study, a senior Angus Reid Public Opinion researcher conducted additional in-depth interviews with 12 IESO customers who had agreed to be contacted post-survey in order to probe more deeply on specific questions about the IESO and the Ontario electricity sector. For this wave of research, the in-depth interviews probed on IESO's leadership, stakeholder engagement, and customer service.

This was Angus Reid Public Opinion's third year as the research provider for the project. In consultation with the IESO, several changes to the survey were implemented in the second year of the research. These changes were carried over in the third year with the focus continuing to be on identifying the drivers of customer satisfaction with the IESO overall as well as the drivers of customer satisfaction within each service offering. As this is the third round of research conducted by Angus Reid on behalf of the IESO, the focus will also be on tracking any changes in satisfaction over the past two years.

The Customer Satisfaction Survey in 2011 identified leadership as a specific area requiring further investigation and the 2012 survey delved deeper into specific drivers of satisfaction with the IESO's leadership and the associations customers have of the IESO as a leader. This focus on leadership was carried over to the 2013 survey.

Overall, the research uncovered a number of useful insights in terms of how IESO clients perceive the organization and what the IESO can do to further burnish its image as a leader and improve its clients' satisfaction with the services they receive from the IESO. The key findings are summarized below and each finding is discussed in more detail further on in the report.

**Overall satisfaction is high:** Consistent with previous years, three-in-five IESO customers are *very satisfied* with the IESO. The factors that are most likely to influence overall satisfaction are leadership, quality of services and stakeholder engagement. Compared to last year, leadership in the sector (an area where the IESO particularly excels) is more likely to influence overall satisfaction with the organization.

**IESO is viewed as the leader in the electricity sector:** Since 2009, the IESO has distinguished itself as the leader in the electricity sector. Perceptions of the IESO's leadership are most driven by its management of the electricity market (an area of success for the organization). The IESO is also noted for operating and maintaining a reliable electricity system. Consistent with previous waves, customers rank "providing a vision for the electricity sector" and "publishing system and market information" as the most important ways the IESO can demonstrate leadership in the sector.

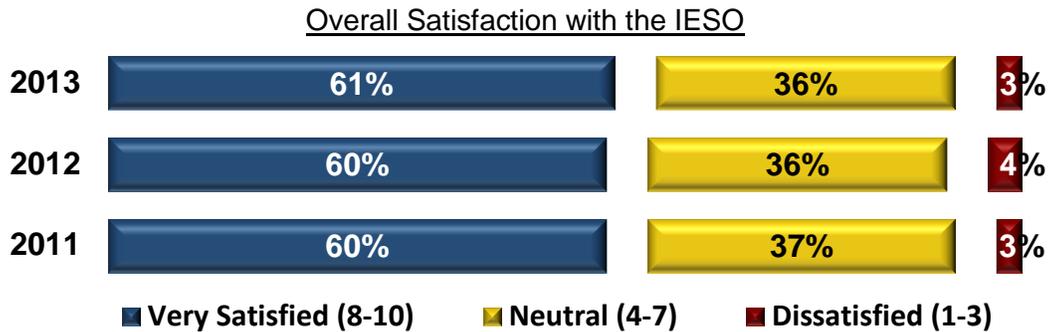
**Exceling in Customer service:** Customer service continues to be an area of strength for the IESO. The IESO continues to score highest in overall customer service with two-in-three customers offering high marks across several subcategories including capability, accuracy of advice, taking personal responsibility of requests, clear communication and correctly identifying needs. Consistent with 2012, almost one-half of customers believe the IESO responds in a timely way *all of the time*. Generally speaking, a timely response is considered to occur within 24 hours. The vast majority say that staff members respond with the information they needed *most of the time* or *all of the time*.

**Stakeholder engagement is key:** While satisfaction with the timeliness of information regarding IESO initiatives and changes has improved since last year, fewer than half of customers feel the IESO considers and uses stakeholder input and is transparent about its decisions. This is significant since demonstrating that the IESO has considered input from stakeholders is a main driver of stakeholder satisfaction. Further, there is a desire for greater transparency in the way that the IESO makes decisions and communicates how input from its stakeholders impacts final outcomes.

The IESO currently operates from a position of strength: it is viewed to be the definitive leader in the electricity sector; it is the most credible source of information; and a majority of IESO clients are already satisfied with the services they receive (especially when it comes to customer service and providing opportunities for stakeholder engagement).

## Overall Satisfaction

The majority (61 per cent) of IESO's clients are very satisfied with the IESO. Further, only three per cent of customers indicate that they are dissatisfied with the IESO. The chart below illustrates that overall satisfaction ratings have remained consistent since 2011.

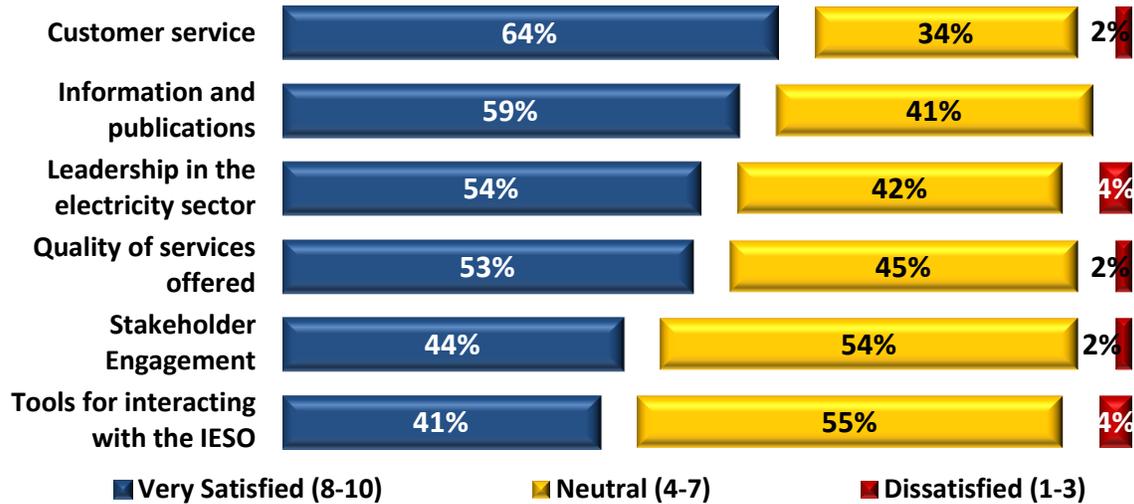


In addition to overall satisfaction, customers were also asked to rate their satisfaction with **six specific aspects** of the IESO. These aspects are as follows:

- Customer Service
- Leadership in the electricity sector
- Quality of Services Offered
- Stakeholder Engagement
- Information and Publications
- Tools

Each of the six categories represents the main categories of services the IESO provides and are consistent with those measured in the previous wave of this research. The chart below reveals that there is considerable variability in the overall satisfaction levels between the various categories. A majority of customers are very satisfied with customer service and information and publications, and approximately half are very satisfied with leadership in the electricity sector and quality of services. Stakeholder engagement and tools for interacting with the IESO have the lowest levels of satisfaction of all six categories.

Satisfaction with the Six Aspects of the IESO



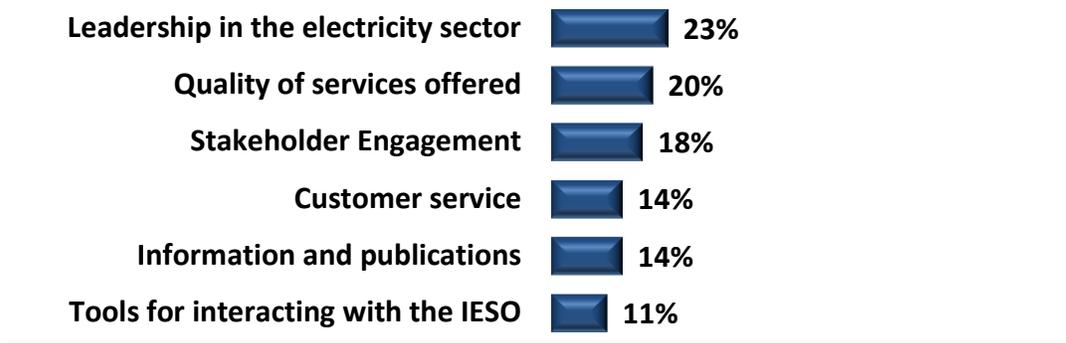
It should be noted that even in categories with the smallest proportion of customers who are very satisfied; the majority of customers gave the IESO a “neutral” rating, revealing that there are no areas of the IESO’s services where customers feel dissatisfied. Satisfaction levels with the six categories have remained stable since 2011.

While knowing the overall satisfaction levels with each of these categories is useful, this alone does not provide a clear picture of where the IESO should focus its to improve its service delivery. One common approach of discerning priority areas of service is to ask respondents which services are most important to them. However, clients often have a difficult time differentiating which service is truly important to them and which is not. Further, clients will often give a socially constructed answer when prioritizing areas of service delivery; their answers can be influenced by what they expect the IESO wants to see or be based on an after-the-fact rationalization. Thus, determining importance by directly asking customers (resulting in “stated importance”), is not always reliable.

To address this, Angus Reid Public Opinion has developed a set of analytical techniques that relies on derived importance rather than stated importance in order to better understand the relationship between these categories and deduce which ones have the most profound impact on overall satisfaction with the IESO. This provides a clearer picture of which categories the IESO should prioritize to have the greatest impact on overall satisfaction. This process is described in greater depth in Appendix 1.

The chart below illustrates the **relative importance** of each of each of the 6 categories in driving overall satisfaction with the IESO. The data reveals that 23 per cent of overall satisfaction with the IESO is driven by satisfaction with IESO’s leadership in the electricity sector. Further, leadership in the electricity sector (23%) is twice as important as the tools used for interacting with the IESO (11%) in driving overall satisfaction.

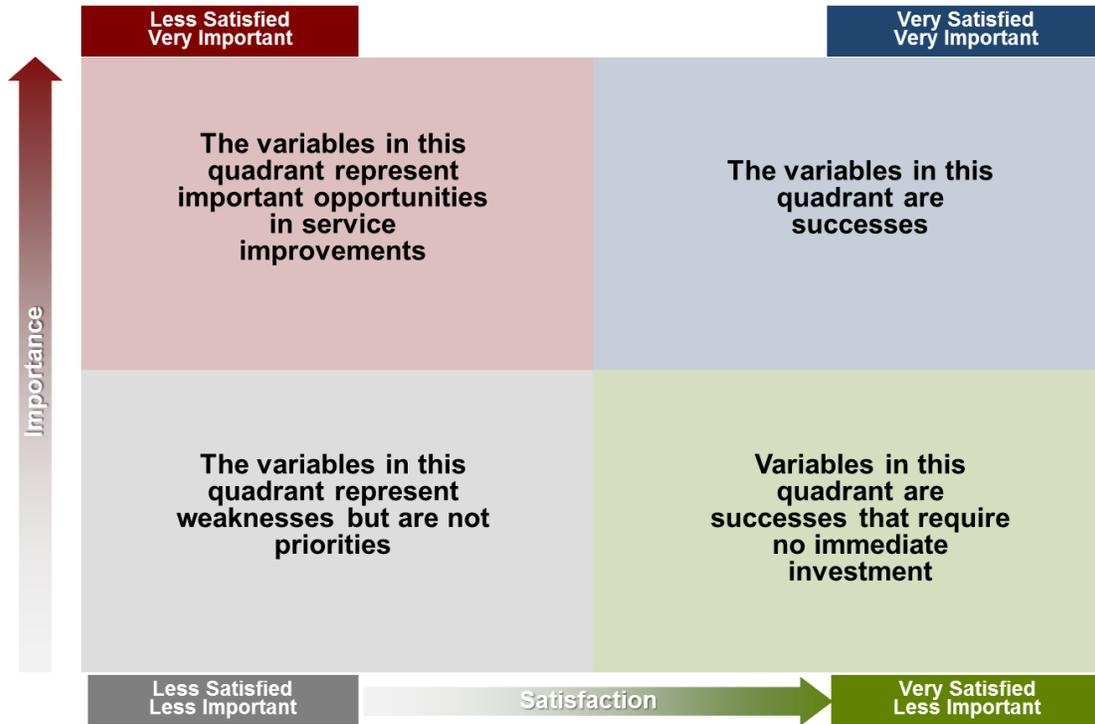
Relative Importance: Overall Satisfaction



The chart reveals that the most important drivers of overall satisfaction with the IESO are leadership in the electricity sector, quality of services offered, and stakeholder engagement. An examination of the relative importance of the categories over time reveals that leadership in the sector, stakeholder engagement, and information and publications have increased in relative importance since 2012, while quality of services offered and customer service have decreased in relative importance in the same time period.

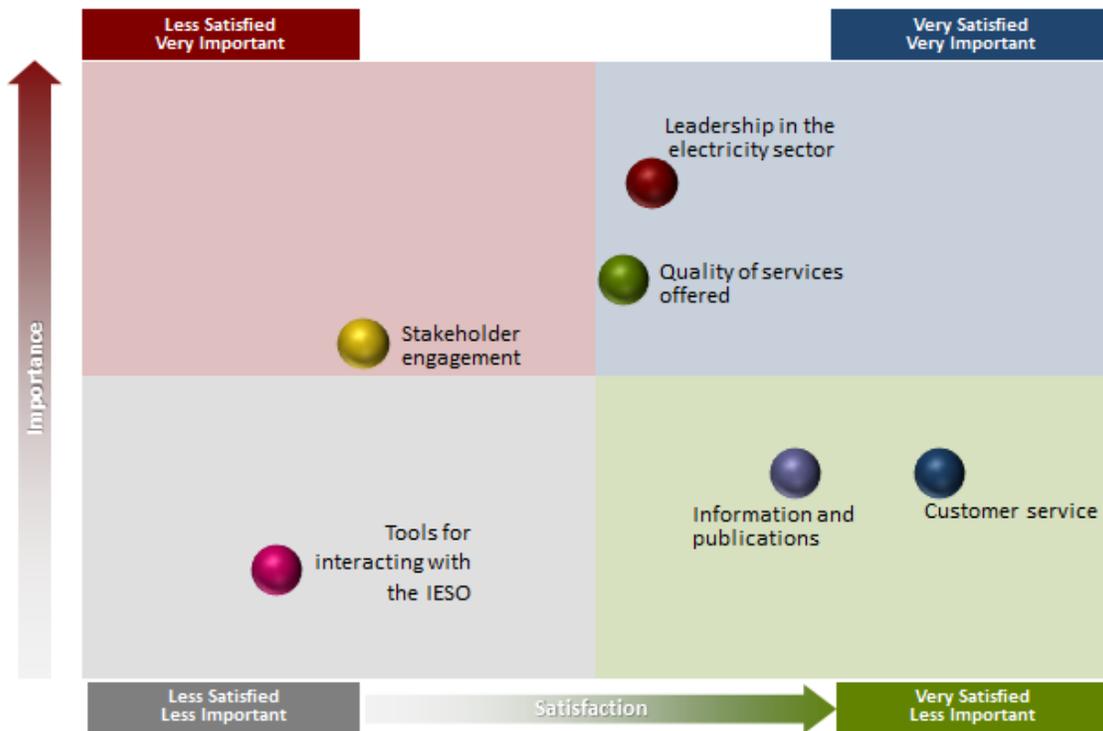
A change in the drivers of satisfaction since the previous year without corresponding significant changes in satisfaction with each aspect indicates that there has been a change to the external environment. While there have been no changes in satisfaction with the IESO itself, the external environment of the energy sector has changed what drives satisfaction.

To determine how satisfaction levels and the relative importance for each aspect of the IESO intersect, satisfaction and relative importance for each category is plotted on the quadrant chart below. The horizontal axis represents the continuum of satisfaction levels where variables on the left side of the graph score below the average level of satisfaction and variables on the right side are variables that score higher than average in satisfaction. Similarly, the vertical axis represents the continuum of relative importance, with variables in the lower half being lower in relative importance and variables in upper half being higher in relative importance.



Satisfaction and relative importance data from the 6 categories result in the following chart.

Driver Analysis: Overall Satisfaction



**Leadership in the electricity sector:** Leadership is the largest contributor to overall satisfaction with the IESO and the majority of customers are very satisfied with IESO's leadership in the electricity sector. This means that the IESO excels in the area that is most important to customers (relative to the other categories). This category is discussed in more depth later in the report, but it is important to note that leadership in the electricity sector is the most important aspect of the IESO that affects customer satisfaction this year, as customer service (the top driver of overall satisfaction last year) has decreased in relative importance since last year while leadership has increased in the same time period.

**Quality of services offered:** Quality of services is the second most important aspect of the IESO, closely following leadership in driving overall satisfaction with the IESO. Quality of services represents another success story as, similar to leadership; customers are very satisfied with the quality of services offered. Even though quality of services has decreased in relative importance since last year, it has maintained its position as the second-largest contributor to overall satisfaction with the IESO.

**Stakeholder engagement:** Stakeholder engagement closely follows quality of services offered in terms of relative importance for overall satisfaction. Although satisfaction levels with stakeholder engagement are below the average for all six categories, the breakout of satisfaction levels with stakeholder engagement reveals that the overwhelming majority of customers feel either very satisfied with it (44%) or neutral towards it (54%). Thus, this category represents an area where the IESO has room to improve, but does not reflect a cause for concern. In fact, all customers who participated in the in-depth interviews expressly reported that they were satisfied with most aspects of the stakeholder engagement process.

**Customer service:** Consistent with previous waves, of all the categories customers are most satisfied with IESO's customer service. It is important to note that just because the relative importance of customer service falls below the average of all six categories, this does not mean that customer service is not important. It simply means that in the current energy environment customer service is, on average, *less* important than leadership, quality of services, and stakeholder engagement in its ability to influence overall satisfaction.

**Information and publications:** A similar pattern emerges in the placement of information and publications on the quadrant chart. Information and publications continues to be an area that customers are very satisfied with, although it does not hold a lot of sway in terms of overall satisfaction with the IESO. This does not mean that information and publications do not matter, it just means that is a weaker driver of overall satisfaction with the IESO as a whole.

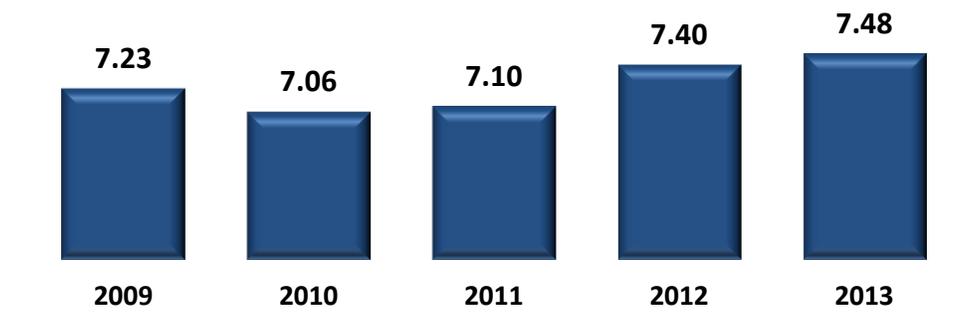
**Tools for interacting with the IESO:** Consistent with last year, tools for interacting with the IESO falls in the bottom left quadrant of the chart, indicating that even though customers have relatively low levels of satisfaction for tools compared to the other categories, satisfaction with this aspect of the IESO is not an important driver of overall satisfaction and therefore not a major concern.

While the summary above is important because it provides us with a greater understanding of the relative importance of each category and points us to areas of improvement, these six categories are very broad. Thus, the next step is to understand the specific elements that drive satisfaction within each category. The goal of this exercise is to pinpoint exactly what the IESO can do to improve service delivery in the areas that have the most impact. The remainder of the quantitative survey was designed to delve deeper into each category, using each of the six categories as separate dependent variables and asking sets of questions that relate to a new set of independent variables. The following sections of this report explore each of these six categories in more detail.

## Leadership in the Electricity Sector

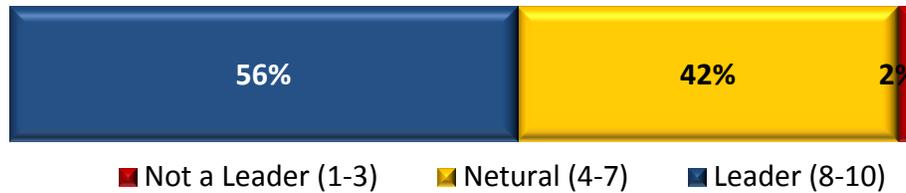
The IESO continues to be perceived by its customers as a leader in the electricity sector as a majority of customers give the IESO high scores on a 10 point scale where “1” represents “not a leader” and “10” represents “very much a leader”. The IESO’s average leadership score is up from 2012 (7.40 in 2012) and is at its highest level in five years (7.48).

IESO’s Mean Leadership Score



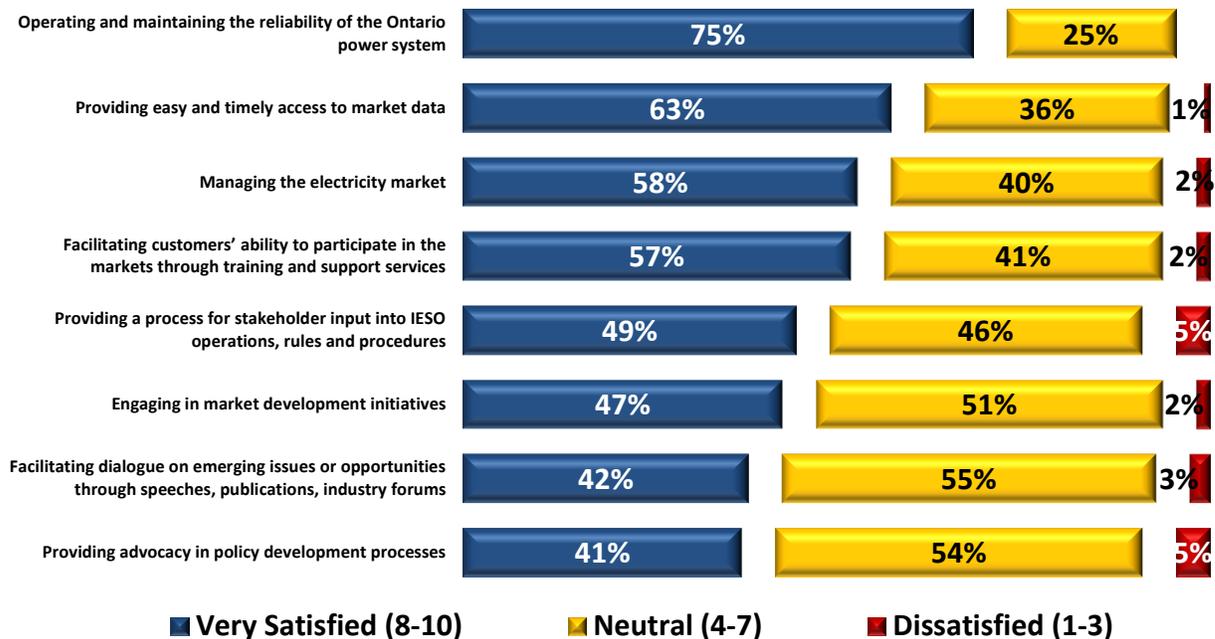
The chart below illustrates that more than half of IESO customers consider the IESO to be a leader in the electricity sector while only two per cent consider the IESO to be not a leader in the sector. The IESO’s leadership score has remained stable since 2011.

IESO's Leadership Score Breakout



With leadership in the electricity sector as the most important driver of overall satisfaction with the IESO - 54 per cent of customers report they are very satisfied with the organization's leadership overall. However, the breakout of satisfaction levels with the various aspects of the IESO's leadership in the chart below reveals considerable variability. Customers are most satisfied with the IESO's performance in operating and maintaining the reliability of the Ontario power system and providing easy and timely access to market data. While facilitating dialogue on emerging issues and advocacy on policy development process are areas of least satisfaction, there is no facet of IESO's leadership that customers report dissatisfaction. The IESO's leadership scores have remained relatively consistent since last year.

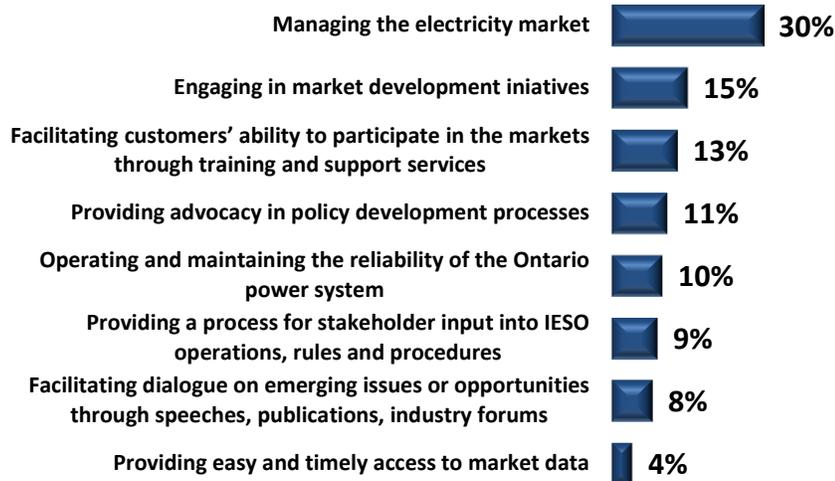
Satisfaction with Different Aspects of IESO's Leadership



In terms of the relative importance of each of the aspects of leadership, the chart below illustrates that "managing the electricity market" is the largest influencer (by a significant margin) to overall satisfaction with IESO's leadership. This attribute has twice the

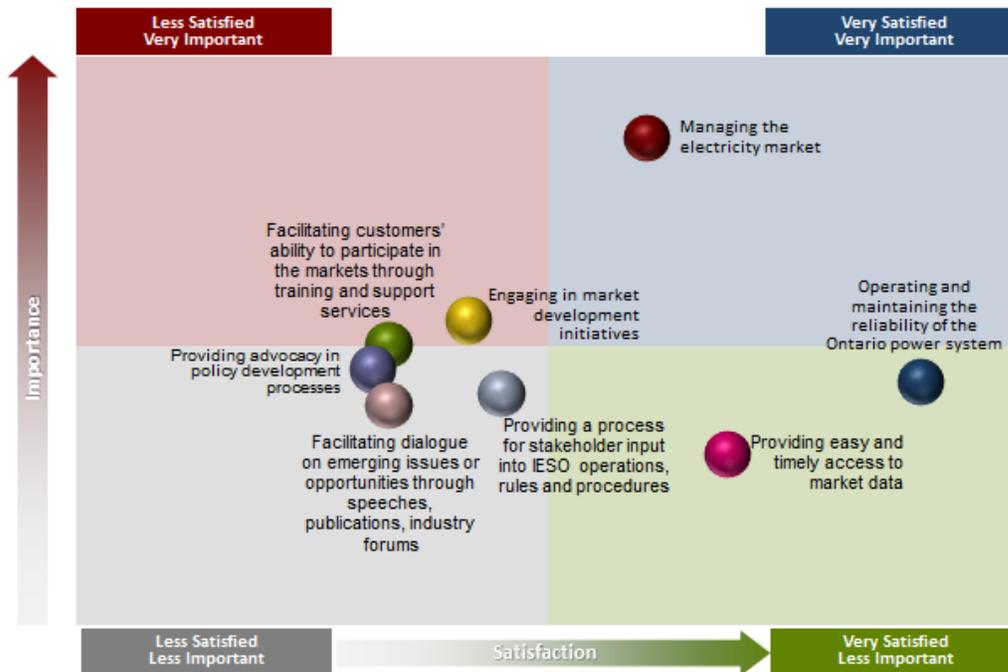
explanatory power (30%) of perceptions of the IESO’s leadership than the next most important attribute (engaging in market development initiatives, at 15%). This importance ranking is consistent with the previous wave of research.

Relative Importance: Leadership



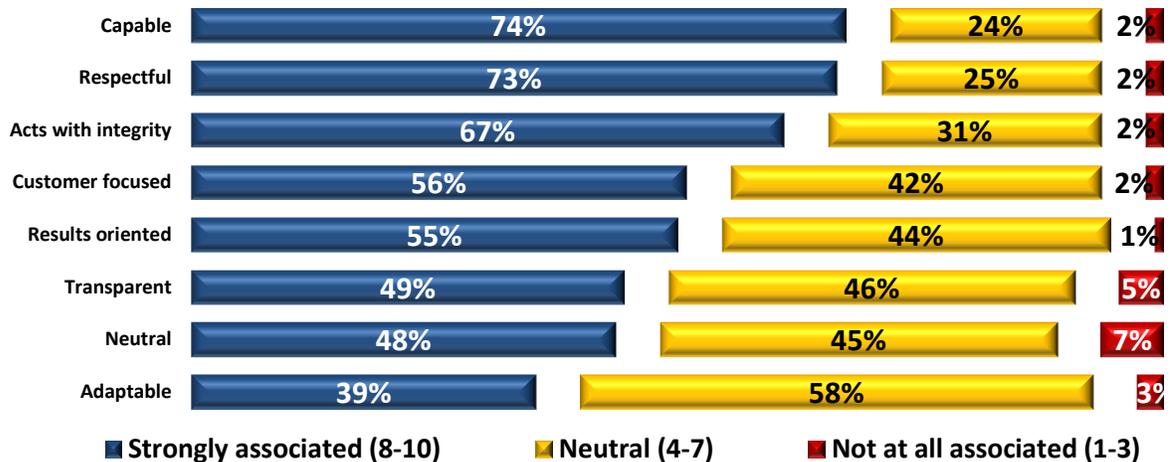
The quadrant chart, seen below, illustrates that managing the electricity market is an aspect of leadership that is very important to customers and is an area where the IESO clearly excels. Engaging in market development initiatives, and to a lesser extent, facilitating customers’ ability to participate in the markets through training and support services, are areas where the IESO can improve. Although there are opportunities to improve in these two areas, the driver analysis reveals that there are no areas where the IESO fails to meet expectations.

Driver Analysis: Leadership



Customers were also asked to indicate the extent to which they associated the IESO with various attributes related to leadership. A large majority of customers associate the attributes “capable”, “respectful”, and “acts with integrity” with the IESO. Also, the proportion of customers who associate the IESO with “customer focused” (56%) and “results oriented” (55%) has significantly increased since last year (rising from 44% and 41%, respectively). Fewer customers associate the IESO with the attributes “transparent”, “neutral”, and “adaptable”.

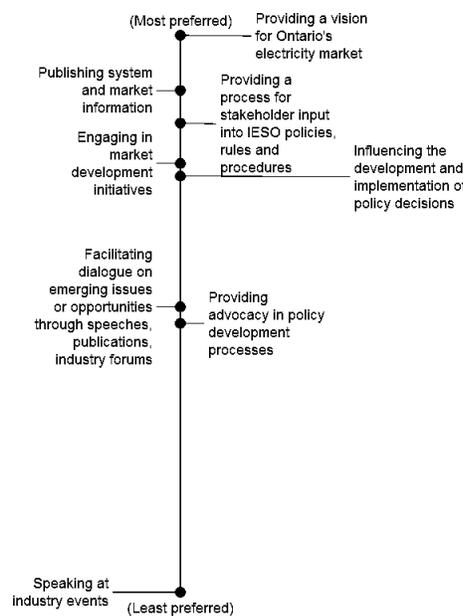
Qualities Associated with the IESO



Consistent with the previous wave of research, customers were asked to rank the importance of various efforts to position the IESO as a leader, to better understand what it means to be a leader in the sector, and to gauge customers' expectations of what the IESO should do to demonstrate leadership. The question asked customers to rank various aspects of the IESO's leadership efforts in order of importance.

To aid interpretation of this ranking question, **Thurstone scaling** was used to plot relative preferences along a continuum, with the most preferred issue (the issue ranked first most often) at the top, the least preferred issue on the bottom, and the others ranked in relative order to their distance between the top and least ranked. The output below reveals a clear hierarchy of what customers are looking for in terms of leadership from the IESO.

Ranking of IESO's Aspects of Leadership



In the past two years, there have been changes in how customers envision the IESO's role in the market, particularly as it pertains to advocacy and policy development. In 2011, customers revealed in the in-depth-interviews that they did not want to see the IESO act as an advocate for market participants. However, in 2012, some expressed interest in seeing the IESO adopting more of a policy and advocacy role, although this opinion was not held by everyone. To gain more insight into how customers feel about this issue, the item "engaging in advocacy and policy development in Ontario" that had been used in 2012 was removed and replaced by the following two separate options: "engaging in market development initiatives" and "providing advocacy in policy development processes". The results reveal that engaging in market development initiatives is ranked highly in importance, much more so than providing advocacy into policy development processes.

Consistent with the findings in 2012, customers believe that providing a vision for Ontario's electricity market, publishing system and market information, and providing a process for stakeholder input are the most important aspects of the IESO's leadership.

When directly asked to rank the importance of the IESO's various efforts with respect to leadership in the sector, publishing system and market information appears at the top. Although this may appear to contradict the finding that information and publications is not a strong driver of overall satisfaction with the IESO (described earlier), it is important to note that customers rate publishing system and market information highly in terms of how the IESO can demonstrate their leadership in the sector. Thus, it is not a reflection of how publishing system and market information affects their overall satisfaction with the IESO. In addition, this finding reveals the difference between customers' stated importance (the importance they attribute to aspects of leadership when directly asked) and derived importance (determined through the use of advanced analytical techniques).

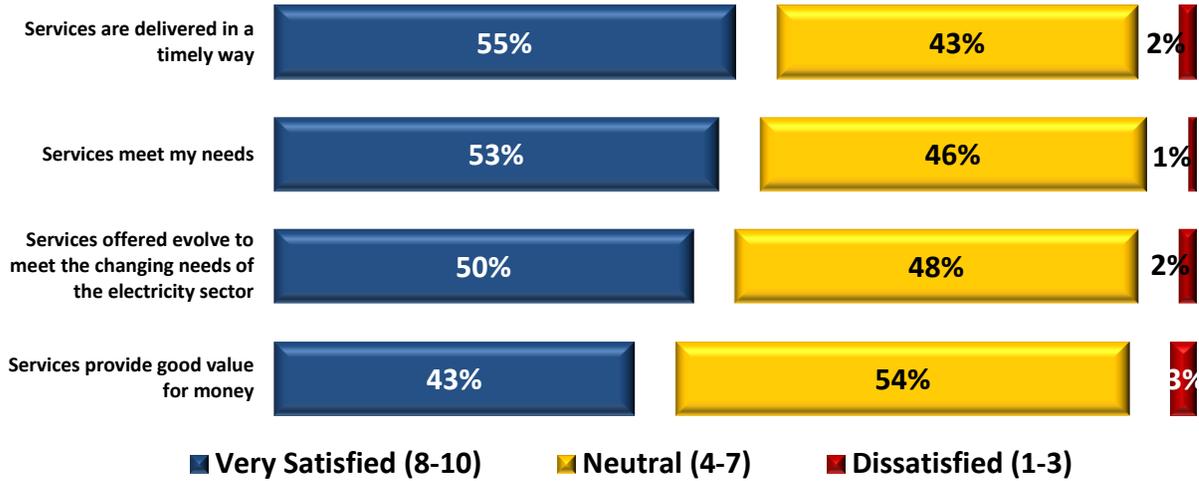
Further, influencing the development and implementation of policy decisions was also found to be important to customers.

Customers expect a leader in the sector to provide a vision for the market and to influence policy in the direction of that vision. They are looking to the IESO to fill that role in addition to being a market operator. Although there were indications of this opinion in 2012, these issues were particularly pronounced in this most recent wave of research.

## **Quality of Services**

Following leadership in the electricity sector, quality of services is the second most important driver of overall satisfaction with the IESO. Approximately 53 per cent of customers are very satisfied with the IESO in this category overall. The chart below illustrates that roughly one-half of IESO customers report that they are very satisfied with the IESO across several facets including: timeliness, ability to meet needs, and evolving service offerings. Over the past year, the IESO has seen marginal improvements in perceptions of meeting needs, evolving services and providing good value for money.

Satisfaction with Quality of Services



In terms of examining the relative importance of how each aspect of quality of services informs overall satisfaction with quality of service, it can be seen that having services that meet customer needs and offering services that evolve to meet the changing needs of the electricity sector are the top two drivers of satisfaction with quality of services.

Relative Importance – Quality of Services



The chart below illustrates where each of the four aspects of quality of services falls relative to the average levels of satisfaction and relative importance. Looking at the quadrant chart, it appears that the IESO’s ability to offer services that meet the changing needs of the electricity sector is an area in which the IESO should prioritize their efforts, as it falls into the “less satisfied and very important” end of two spectrums. However, it is important to note that there is not a great amount of variability in satisfaction levels and relative importance scores, *especially* between the top two drivers of satisfaction with quality of services (satisfaction levels for services meet my needs and services offered evolve to meet the changing needs of the electricity sector are 53% and 50%, respectively, while their importance scores are 30% and 29%).

Thus, to have the largest impact on satisfaction with quality of services, the IESO should focus on both meeting customer needs and offering services evolving to meet the needs of the sector.

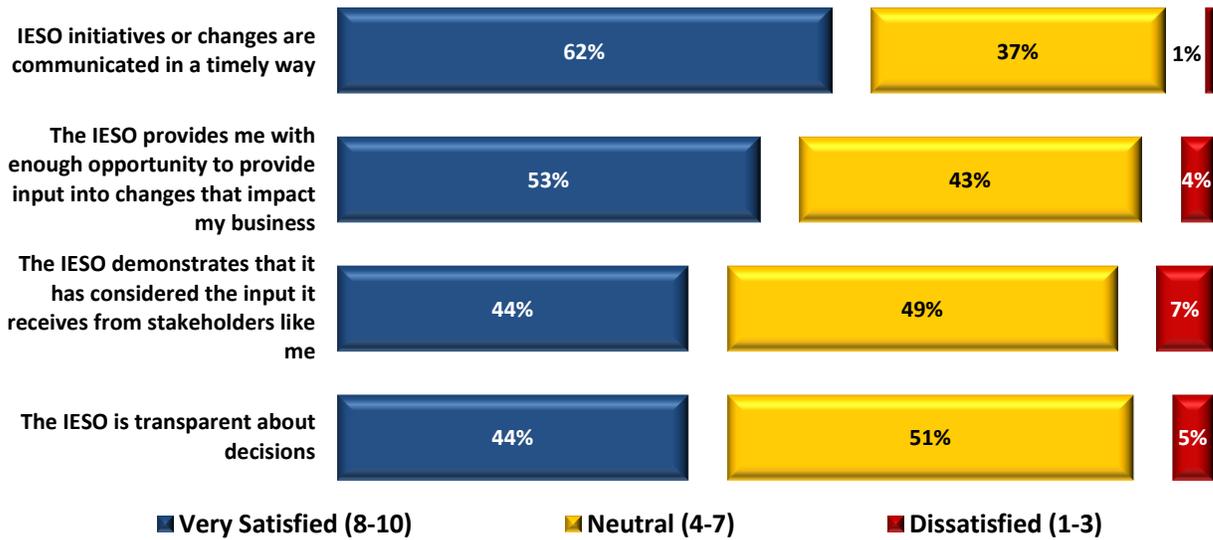
Driver Analysis - Quality of Services



## Stakeholder Engagement

Stakeholder engagement is on par with quality of services offered in terms of its impact on overall satisfaction with the IESO. Overall, 44 per cent of customers are very satisfied with stakeholder engagement. The breakdown of satisfaction levels with the different components of stakeholder engagement displays some variability. A majority of customers are satisfied with timeliness of communications related to IESO initiatives or changes (up 16 points from last year). Approximately half of customers are satisfied with the amount of opportunities the IESO offers to provide input on changes that affect customers' organizations. Fewer are satisfied with demonstrations that the IESO has considered the input from its stakeholders and is transparent about its decisions, although satisfaction levels for both aspects have seen marginal improvements since 2011.

Satisfaction with Components of the Stakeholder Engagement Process



The chart above illustrates that customers are most satisfied with the timeliness of communications about upcoming IESO initiatives or changes.

The chart below reveals that opportunities for providing input, demonstrations that the input is thoughtfully considered, and communicating changes or initiatives in a timely manner are all important drivers of overall satisfaction with stakeholder engagement, as there is little variability between the scores for each of these aspects. Being transparent about decisions is the only aspect that stands out as it is of lower relative importance.

The IESO’s ability to give customers opportunities to provide input has remained the top driver of satisfaction with the stakeholder engagement. However, the importance of the IESO demonstrating that it has considered stakeholder input has increased last year, placing it on par with having opportunities to provide input.

Relative Importance – Stakeholder Engagement

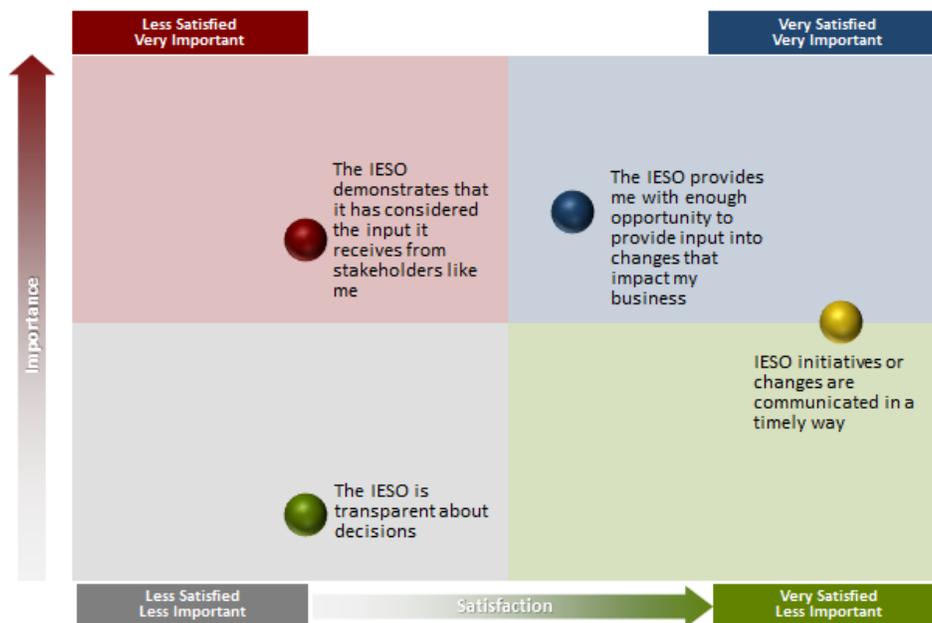


The quadrant chart below illustrates the relationship between satisfaction levels and the relative importance of each aspect of stakeholder engagement. Consistent with the findings from the in-depth interviews, the chart illustrates that providing opportunities for stakeholders to provide input, and to a lesser extent, communicating IESO changes or initiatives in a timely way, are areas where the IESO clearly excels. The fact that customers are very satisfied with their opportunities for engagement is important, as this is one of the top two drivers of satisfaction with stakeholder engagement.

It is also apparent that, although being transparent with decisions is the area of stakeholder engagement that has the lowest levels of satisfaction; it is not an urgent concern because this is not as important for overall satisfaction with stakeholder engagement, relatively speaking, as the other aspects.

Clearly demonstrating that stakeholder input is adequately considered is the area that presents the greatest opportunity for improvement, as this is the other top driver of overall satisfaction with stakeholder engagement. Although the results of the interviews reveal that the current responses to stakeholder input is not completely effective at convincing stakeholders that their input has been adequately considered, customers did not offer any suggestions on how the IESO could demonstrate this better.

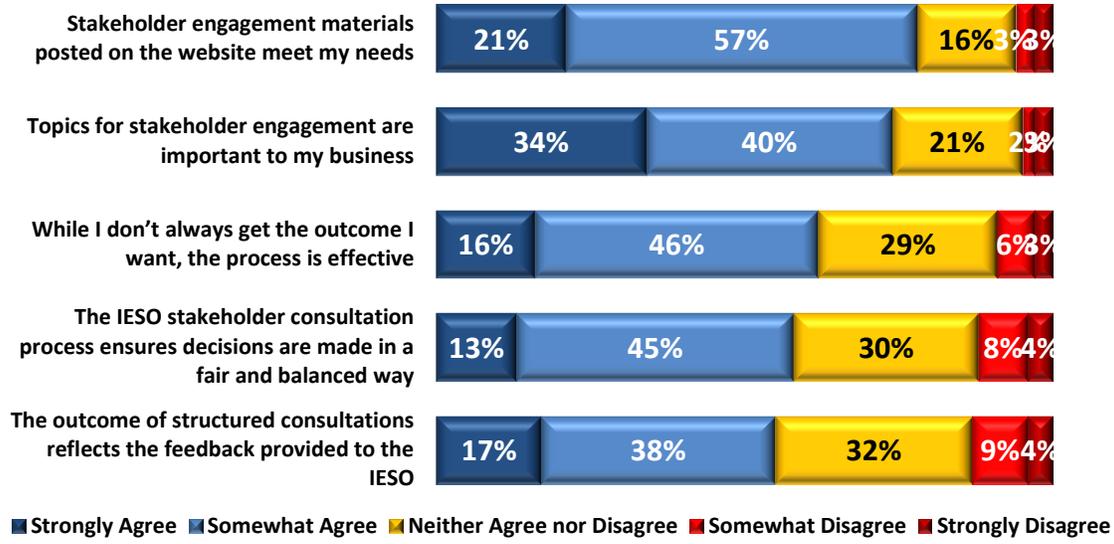
Driver Analysis - Stakeholder Engagement



Additional questions about the stakeholder engagement process also illustrate this point. As seen in the chart below, agreement is weakest for the statement “the outcome of structured consultations reflects the feedback provided to the IESO”. Agreement is strongest for engagement topics being important to customers’ businesses. In addition,

agreement that engagement materials on the website are meeting needs has increased since last year.

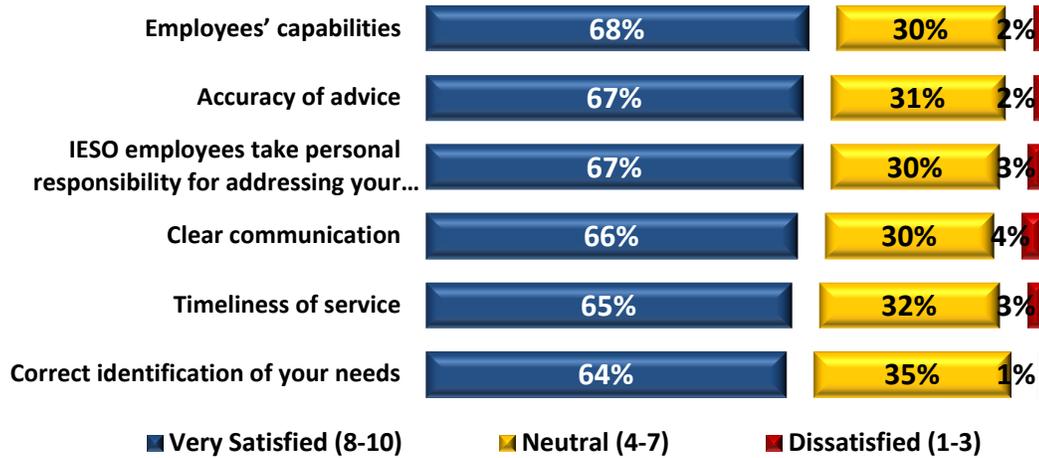
Agreement Statements for Stakeholder Engagement



## Customer Service

Overall satisfaction with the IESO’s customer service remains high, as 64 per cent of customers are very satisfied with it. Consistent with previous waves, there is little distinction between satisfaction levels with the various aspects of customer service. Satisfaction levels with the different aspects of customer service have stayed relatively constant over time, except that satisfaction with accuracy of advice has declined since 2011 (from 78 per cent in 2011 to 67 per cent in 2013).

Satisfaction with Specific Aspects of Customer Service



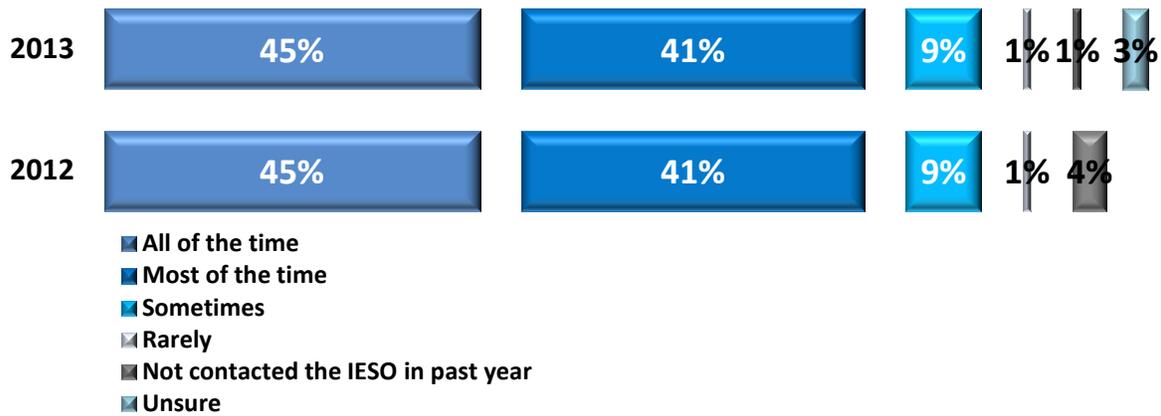
A large majority of IESO customers are very satisfied with all aspects of customer service.

Relative Importance - Customer Service Satisfaction



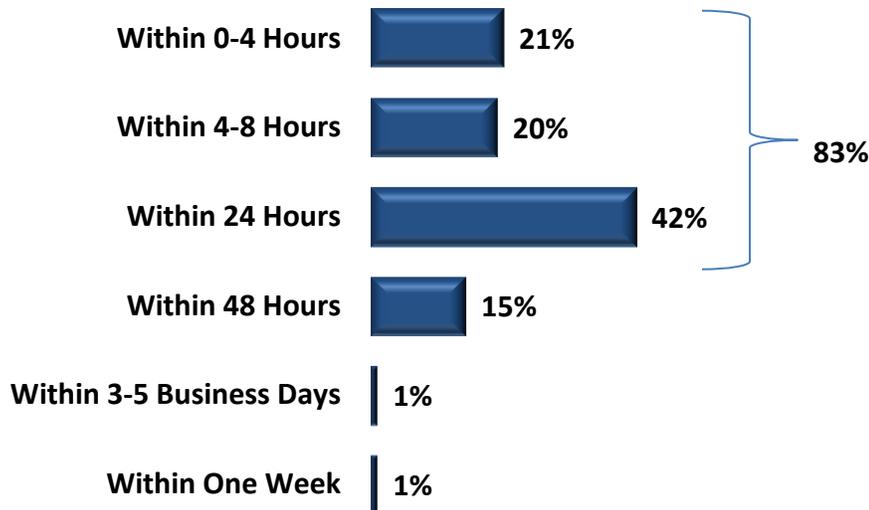
Timeliness of responses has is ranked as one of the top three drivers of satisfaction with customer service. The chart below reveals that, consistent with 2012, almost one-half of customers believe the IESO responded in a timely way *all of the time* whereas only one-in-ten said that the IESO *sometimes* or *rarely* responded in a timely manner.

Timeliness of Staff Responses



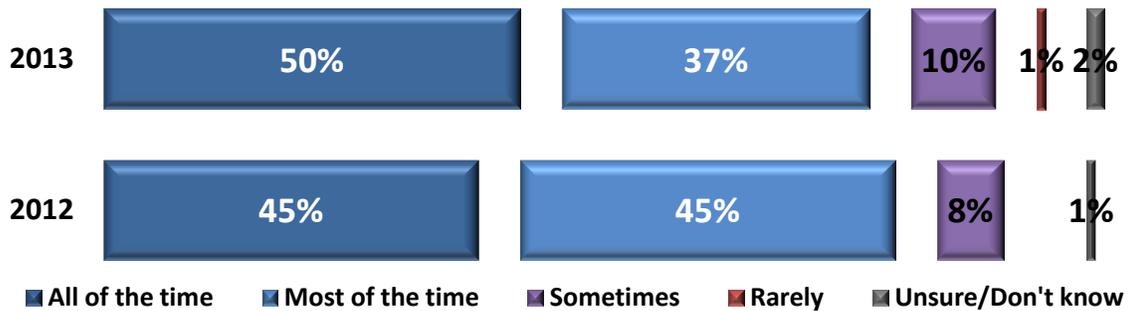
To better understand customer evaluations of the timeliness of staff responses, and particularly what customers have in mind when they think of a “timely” response, customers were asked to select the timeframe they consider to be “timely”. The chart below reveals that the vast majority of IESO customers believe a “timely” response occurs within 24 hours and one third believes it should occur within eight hours.

Customer Perceptions of “Timely” Responses



Lastly, customers were asked to indicate how many times in the past year IESO staff members responded with the information they needed. Consistent with last year, the vast majority of IESO customers report staff members responded with the information they needed *most of the time* or *all of the time*.

Ability of the IESO Staff to Provide Information Needed

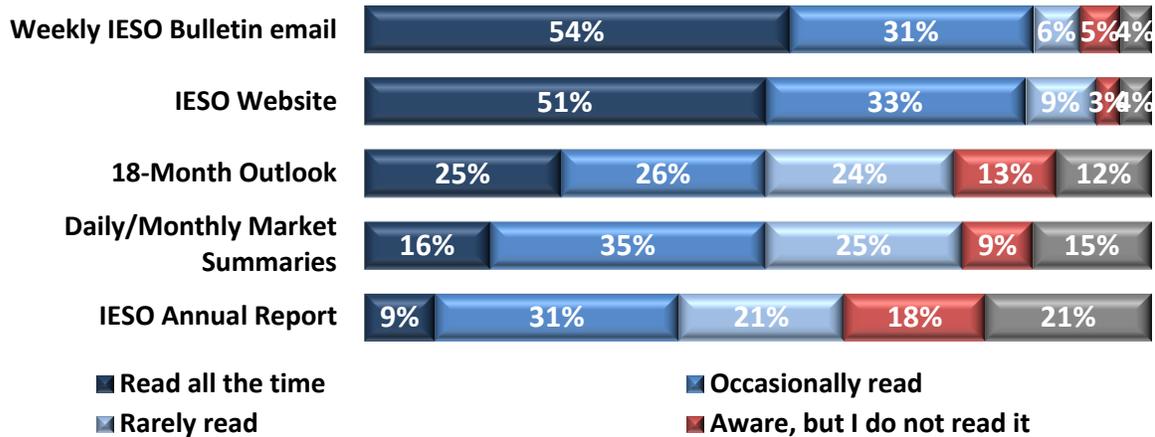


**Information and Publications**

Although information and publications exerts the weakest direct influence of all the different categories on overall satisfaction with the IESO, it plays an important role as an indirect driver of overall satisfaction. It is important to understand that satisfaction with information and publications does not exist in isolation; information and publications informs perceptions of and satisfaction with leadership in the electricity sector, which is a large driver of overall satisfaction. Thematically, the organization’s ability to deliver accurate and timely information to its customers was expounded upon many times over the course of the interviews. Overall, IESO customers are very satisfied with the organization’s information and publications, as 59 per cent report being very satisfied overall.

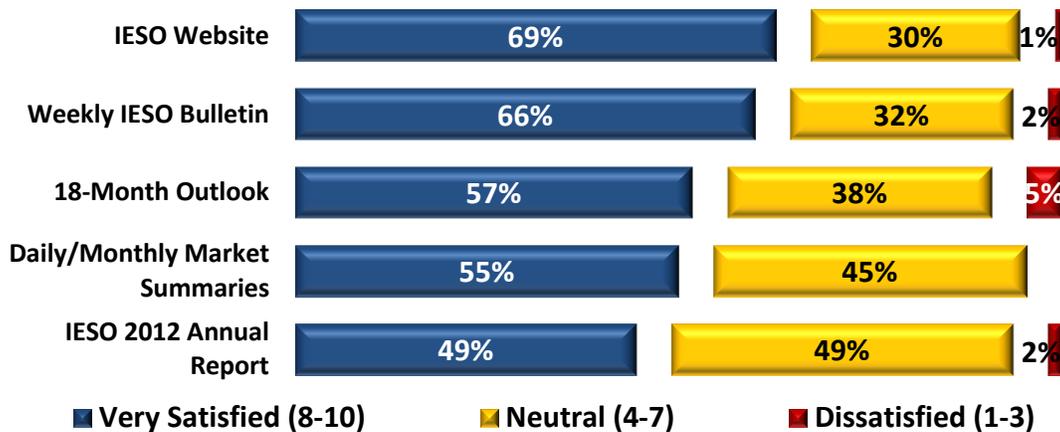
Before asking about the content and quality of the information and publications that the IESO offers, information and publication usage among IESO customers was determined. The chart below reveals that approximately 85 per cent of IESO customers read the Weekly IESO Bulletin email “some of the time” or “all of the time” (up from 67 per cent in 2012) and 84 per cent go to the IESO website “some of the time” or “all of the time” (up from 84 per cent in in 2012). The proportion of IESO customers who read the 18-month outlook and Annual Report has decreased since 2012 (from 51 per cent in 2012 to 25 per cent in 2013 and from 40 per cent in 2012 to per cent, respectively).

Information and Publication Usage



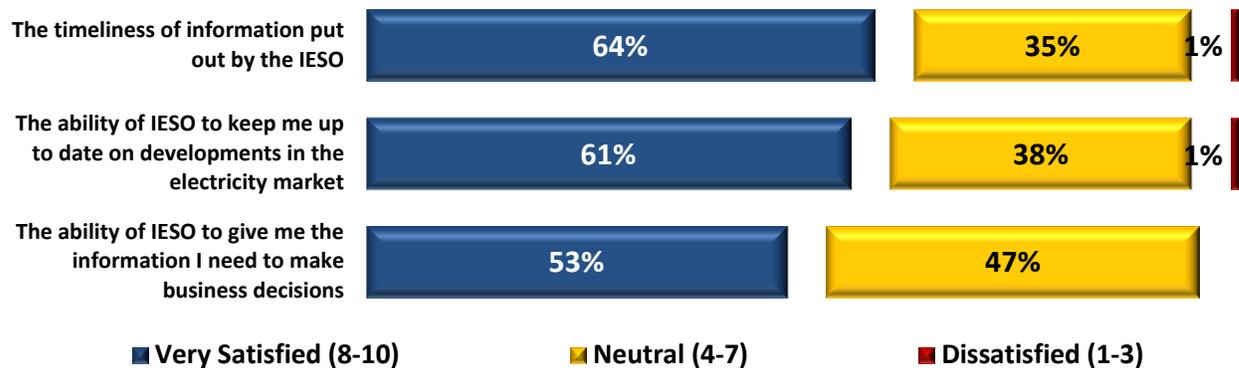
The pattern of satisfaction levels for each information source is similar to the pattern of awareness and usage of each information source, such that information sources that are read the most have the highest satisfaction levels while those that are read the least have lower levels of satisfaction. The most widely read information sources, the IESO Website and the Weekly IESO Bulletin email, receive the highest satisfaction scores and have seen a jump in satisfaction since 2012. Satisfaction has increased for all of the measured IESO media since the previous year with the exception of the annual report (where readership has declined).

Satisfaction with Information and Publications



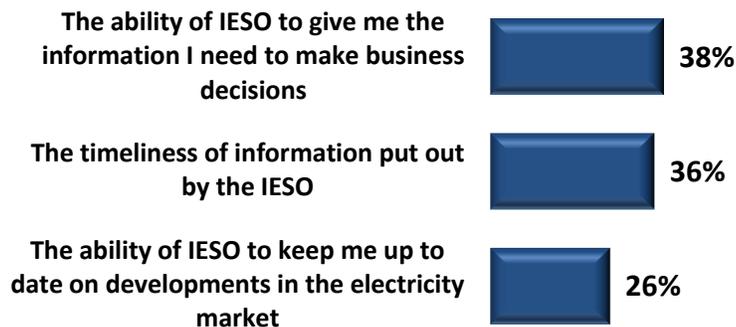
After establishing usage and satisfaction with the different types of information sources, customers were asked to indicate their levels of satisfaction with three aspects of the information and publications category. The chart below reveals that the IESO's customers are generally satisfied with all aspects of information and publications. Satisfaction with timeliness of information put out and the IESO's ability to give information necessary for business needs has increased since last year.

Satisfaction with Aspects of Information and Publications



An examination of the relative importance of each of these aspects of information and publications reveals that the ability to provide information needed to make business decisions and the timeliness of the information are virtually tied as top drivers of overall satisfaction with information and publications.

Relative Importance – Information and Publications



The quadrant chart below displays the areas of information and publications in which the IESO excels and also offers insight into where there is room to improve. The timeliness of the information put out by the IESO is an area of success for the IESO as it is both important, relative to the other aspects, for satisfaction with information and publications, and is also an area that has high satisfaction scores. While satisfaction is also high for the ability of the IESO to keep customers up to date on the developments in the market, this is an area that is less important to customers in affecting their overall satisfaction with this category. The ability of the IESO to provide information customers can use to make informed business decisions is another important driver of satisfaction, but has the lowest satisfaction scores of the three. Since half of customers are satisfied with this aspect while the other half are neutral, there is room to move the needle in this category and improve satisfaction with information and publications overall.

Driver Analysis - Information and Publications



**Conclusions and Recommendations**

The IESO has continued to obtain relatively high scores in overall customer satisfaction, perceptions of leadership and credibility, and a variety of satisfaction metrics. This report has identified key variables that drive overall satisfaction and satisfaction in each category as well as more specific areas the IESO could focus on as it looks ahead.

Customers look to the IESO to provide leadership in the electricity sector, particularly in the area of managing the market, engaging in market development initiatives and facilitating customers’ ability to participate in markets. While leadership and providing a vision for the market is wanted from the IESO, customers also want to be involved in the stakeholder process and for the IESO to demonstrate how input is considered during the engagement process.

## Appendix 1, Shapley Value Regression Explained: The Driver Analysis

While fairly technical in nature, it is important to fully explain how the approach to driver analysis works since it contributes significantly to our findings in this report.

The basic premise behind the regression in this context is simple. Overall satisfaction is used as a dependent variable (that is the variable that depends on other factors) and satisfaction with each of the six categories as the independent variables (that is the variables that might impact overall satisfaction). The regression provides the information needed to determine, for instance, the extent to which an incremental increase in satisfaction with customer service will influence overall satisfaction with the IESO. Mapping out the relationship in this manner provides a much cleaner read on the relative importance of each service.

Most regressions, however, hit up against an important limitation in mapping out these relationships: **multicollinearity**. Essentially, multicollinearity is the result of two or more variables, or in our case categories, being correlated to one another. For example, types of services and quality of services, while distinct in reality, may be interrelated in customers' minds and therefore highly correlated in the regression. The problem is that a standard regression model (such as a Least Square Regression), essentially flips a coin when it comes across two closely related terms to determine which one will be the "dominant" variable in the model. This can create instability in the model over time – type of service may win the "coin toss" one year, only to lose it to quality of service the next. This can create a situation where an organization decides to focus on the types of services it offers one year only to discover that quality of services matters more the next.

The reality of the situation is more nuanced; it is usually the case that both variables are important in driving satisfaction but that a more advanced regression model is needed to cut through the multicollinearity.

In our experience the Shapely Value Regression model is unique in its ability to address this issue. It works by running the regression model over hundreds of iterations, substituting out each independent variable an equal number of times. This creates a kind of round robin where the impact of each independent variable is measured in every possible combination of variables. Depending on the number of variables this can lead to literally hundreds of iterations but the end result is always the same – a clean solid read on the relative impact of each variable, regardless of how closely correlated they may be to one another.