

Guide to Prudentials at the IESO

IESO Training

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Guide to Prudentials at the IESO

AN IESO MARKETPLACE TRAINING PUBLICATION

This guide has been prepared to assist in the IESO training of market participants and has been compiled from extracts from the market rules or documents posted on the web site of Ontario's Independent Electricity System Operator. Users of this guide are reminded that they remain responsible for complying with all of their obligations under the market rules and associated policies, standards and procedures relating to the subject matter of this guide, even if such obligations are not specifically referred to herein. While every effort has been made to ensure the provisions of this guide are accurate and up to date, users must be aware that the specific provisions of the market rules or particular document shall govern.

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1. Introduction

If you¹ participate in the IESO real-time markets, you must provide collateral (called 'prudential support') to cover funds that might be owed to the market if your company were unable to make a payment.

This guide explains:

- Why we require prudential support
- How the prudential support amount is determined
- What type of collateral is acceptable
- When and why your prudential support amount might be reassessed
- What happens if you don't maintain your prudential support obligations

Why do we require prudential support?

In the real-time electricity markets, there is no way to recover the physical commodity if the buyer is unable to pay – the electricity has already been consumed.

Under the market rules, the IESO must pay energy suppliers within 4 business days of when we issue invoices. Buyers must pay the IESO within 2 business days of when we issue their invoice so that we can then remit funds owed to suppliers.

If a buyer does not make the required payment, the IESO does not assume the debt – instead, all non-defaulting market participants assume any default. The prudential support process ensures that we have a reasonable amount of collateral on hand to cover potential default situations. The process provides a reasonable degree of protection to non-defaulting participants from the risk of having to cover a defaulted payment.

Do all market participants have to provide prudential support?

Prudential requirements are based on your activities in the market – the requirements are not the same for all market participants. In some cases, your prudential support obligation may be zero – for example, if you supply energy to the market and are a net creditor in the market. During the market entry process, you will be informed if you initially need to provide prudential support. However, this obligation can change if your activity in the market changes.

¹ In this document, 'you' refers to the market participant. 'We', 'us', and 'our' refer to the IESO.

How do we monitor your activity so that we know you always have enough prudential support posted?

We assess your actual exposure against your trading limit and issue margin call warnings and margin calls as required. (See Section 8.)

In addition, if you are receiving a credit rating or good payment history reduction, changes to either your credit rating or good payment history may trigger changes to your prudential requirement.

How do you monitor your prudential information?

To facilitate access to prudential support information, the IESO offers the Prudential Manager (See Appendix B). This is available to all Prudential Requirement contacts registered with the IESO. A secure log in is provided to contacts for the IESO Portal Prudentials community (A Portal community page is a web page where users with similar interests can access applications, use related links, and get information.)

User accounts for the Production environment must be requested by a Rights Administrator registered with us through the online registration system at <https://online.ieso.ca>.

User accounts for the Sandbox environment (for testing and training) must be requested by a Rights Administrator registered with us through the sandbox online registration system at <https://onlinesandbox.ieso.ca>.

For assistance, contact IESO Customer Relations.

Where can you find additional information about prudentials?

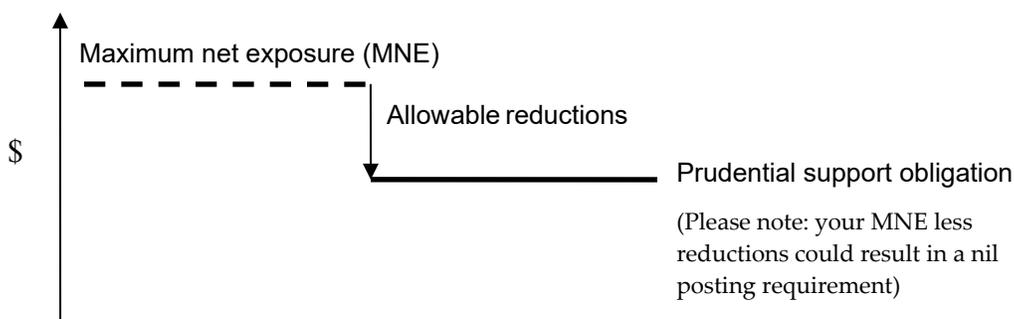
If, after reading this guide, you need additional information about your prudential support, please refer to:

- Market Rules, Chapter 2
- Market Manual 5.4
- Prudentials Online: <http://www.ieso.ca/Online-IESO>
- Your account manager

2. Determining the Amount of Your Prudential Support

During the market entry process, we ask you to provide information about your expected trading activity in the real-time markets. You are required to submit this information through Online IESO <https://online.ieso.ca/>.

You should have enough prudential support posted so that if your company were unable to make a payment, there would be enough collateral to cover any funds owing to the market, subject to any reductions in your prudential calculation. We use the information you provide to determine your prudential support obligation, which is a function of your maximum net exposure and any allowable reductions:



Both your maximum net exposure and allowable reductions depend on whether or not you have chosen the no margin call option. Also, your role and use of physical bilateral contracts in the market affect your prudential support obligation.

Determining Prudential Support using the Margin Call Option

The margin call option is the way that we calculate your prudential support obligation; you must select the “no margin call option” when entering your prudential information through Online IESO (https://online.ieso.ca) if you want us to use that method.

To determine your obligation using the margin call option, we consider your:

- Maximum net exposure
- Self-assessed trading limit
- Minimum trading limit
- Default protection amount
- Credit information
- Payment history

Maximum net exposure (MNE)

Your maximum net exposure is our estimate of the net amount you could owe in the real-time markets.

We estimate your maximum net exposure based on the information you provide through Online IESO (<https://online.ieso.ca>). We look at:

- Your expected daily maximum energy injections and withdrawals
- For metered participants: your estimated peak load for upcoming billing periods
- For non-metered participants: your expected net settlement amount
- Your self-assessed trading limit

We calculate your MNE by adding your trading limit and your default protection amount (see page 9).

If your maximum net exposure is zero or negative, you do not need to provide any prudential support.

Determining your trading limit

You set your own estimate of what your trading limit within the real-time markets should be, and the IESO also determines a minimum trading limit for you that is equivalent to approximately 7 days of market activity. The minimum trading limit provides you the lowest possible trading limit you are allowed under the market rules.

If your self-assessed trading limit is higher than the IESO-determined limit, we use your self-assessed trading limit as your trading limit.

Your trading limit serves as a warning of potential over-exposure in the real-time markets. If your actual exposure reaches or exceeds your trading limit, we will issue you a margin call if you have not opted to use the no margin call option (see Section 8).

You may decide which assumptions to use in estimating your trading limit – we recommend that you try to reflect your expected exposure in the real-time markets for the upcoming billing period. If you do not wish to receive margin call demands, then it's best if you set the limit so that your actual exposure would not reach your trading limit before you make your next invoice payment. You must submit your self-assessed trading limit at least 7 days ahead of the billing period you want it to apply to. This limit will apply to all future billing periods unless it is changed.

Determining your self-assessed trading limit

You should consider:

- What is your current, estimated actual exposure?
- What additional real-time market charges do you expect to incur by the time you make your next payment to the IESO?
- Do you have any physical bilateral contracts (see Section 5)?

For metered market participants:

At Online IESO (<https://online.ieso.ca>) you can either enter the number of days for your self-assessed trading limit or a dollar amount. You can use the following formula to determine the dollar amount of your self-assessed trading limit (see explanations below):

Your daily estimated withdrawals from the grid in megawatt hours (MWh)
X number of billing days (range from 7-49 days)
X price
+ transmission charges
= self-assessed trading limit

Explanation of formula items:

Billing days

We encourage you to use 49 days in your calculation – this takes into account our 30-day billing period, 15-day invoicing period, 2-day remittance period, and our 2-day review period.

Price

Price estimates ²are in dollars per megawatt hour (\$/MWh)

102.10 ³	Energy (estimated price)
7.00	Debt Reduction Charge
2.10	Rural or Remote Electricity Rate Protection
1.1636	IESO Fee
<u>4.20</u>	Uplift and Ancillary
116.56	
<u>X 1.13</u>	Applicable Taxes (i.e. HST)
131.71	

²Please note: example is for illustrative purposes only.

³Please note: the estimated energy price will be adjusted for 'Class A' wholesale consumers. See "Global Adjustment" on page 22 of this guide for additional information.

Transmission charges

Add transmission charges that apply to you (transmission charges are based on your estimated peak load for the upcoming billing period):

- Network Service Charge \$3.66/kW/month (+ applicable taxes)
- Line Connection Service Charge \$0.87/kW/month (+ applicable taxes)
- Transformation Connection Service Charge \$2.02/kW/month (+ applicable taxes)

The IESO-set minimum trading limit

We set your minimum trading limit by estimating the net settlement amounts you would incur in the real-time markets over 7 days of market activity, ignoring the impact of physical bilateral contracts.

(If you have a credit rating of BBB– or higher, you may request that we take physical bilateral contracts into account when we determine your minimum trading limit. If you make this request, you must send us your physical bilateral contract information and immediately let us know when there are any changes to these contracts.)

Keep in mind that if your self-assessed trading limit is higher than the IESO-determined limit, we will use your self-assessed trading limit as your trading limit.

Following are examples of minimum trading limit calculations.

2. Determining the Amount of Your Prudential Support

Example 1: Minimum Trading Limit Wholesale consumer with 200 MW peak load

Total daily energy consumption:	3,360 MWh/day
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Minimum Trading Limit Calculation

Energy exposure 3,360 MWh/day × \$102.10 × 7 days	\$2,401,392
Transmission exposure 200 MW/month × 1000 kW/MW × 1 month × \$3.66/kW	\$732,000
200 MW/month × 1000 kW/MW × 1 month × \$2.02/kW	\$404,000
200 MW/month × 1000 kW/MW × 1 month × \$0.87/kW	\$174,000
Debt Recovery Charge \$7 /MWh × 3,360 MWh/day × 7 days	\$164,640
Rural or Remote Electricity Rate Protection \$2.10 / MWh × 3,360 MWh/day × 7 days	\$49,392
IESO fee \$1.1636 /MWh × 3,360 MWh/day × 7 days	\$27,368
Uplift & ancillary charges \$4.20 /MWh × 3,360 MWh/day × 7 days	\$98,784
Subtotal	\$4,051,576
13% (applicable taxes)	\$ 526,705
MINIMUM TRADING LIMIT	\$4,578,281

Example 2: Minimum Trading Limit Generator with 200 MW peak generation capacity

Total daily energy production	(3,360) MWh/day
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Minimum Trading Limit Calculation

Energy exposure $3,360 \text{ MWh/day} \times \$102.10 \times 7 \text{ days}$	(\$2,401,392)
MINIMUM TRADING LIMIT	\$ 0

For non-metered market participants:

For your self-assessed trading limit, you may choose any percentage greater than 25% of your estimated net settlement amount for the upcoming billing period – in other words, 25% of the ‘amount owing’ that you expect to see on your invoice.

To decrease the likelihood of receiving frequent margin calls, we encourage you to use 100% and 49 days in your calculation – this takes into account our 30-day billing period, 15-day invoicing period, 2-day remittance period, and our 2-day review period.

The IESO-set minimum trading limit

We set your minimum trading limit at 25% of your estimated net settlement amounts – based on either your recent market activity or on a forecast of your future market activity. As with metered market participants, if your self-assessed trading limit is higher than the IESO-determined limit, we will use your self-assessed trading limit as your trading limit.

Example 3: Minimum Trading Limit

Marketer/retailer purchasing 200 MW from real-time energy market

Marketer/Retailer informs via Online IESO that their expected net settlement amount is \$1,525,000

Minimum Trading Limit Calculation

25% of Expected Net Settlement Amount	\$381,250
MINIMUM TRADING LIMIT	\$381,250

Your default protection amount

This is our estimate of the additional debt you could accumulate in the real-time markets from the time you defaulted on a payment to the time you could be removed from the market, and prevented from incurring any further debt. We use this amount to determine your maximum net exposure.

For metered market participants: your default protection amount equals our estimate of the net settlement amount you would incur in the real-time markets over 21 days of market activity, ignoring the impact of physical bilateral contracts (see Section 5).

(If you have a credit rating of BBB– or higher, you may request that we take physical bilateral contracts into account when we determine your default protection amount. If you make this request, you must send us your physical bilateral contract information and immediately let us know of any changes to these contracts.)

Here are two examples of a default protection amount calculation for a metered market participant:

2. Determining the Amount of Your Prudential Support

Example 4: Default Protection Amount Wholesale consumer with 200 MW peak load

Total daily energy consumption:	3,360 MWh/day
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Default Protection Amount

Energy exposure 3,360 MWh/day × \$102.10 × 21 days	\$7,204,176
Transmission exposure 200 MW/month × 1000 kW/MW × 1 month × \$3.66kW	\$732,000
200 MW/month × 1000 kW/MW × 1 month × \$2.02kW	\$404,000
200 MW/month × 1000 kW/MW × 1 month × \$0.87kW	\$174,000
Debt Recovery Charge \$7 /MWh × 3,360 MWh/day × 21 days	\$493,920
Rural or Remote Electricity Rate Protection \$2.10 / MWh × 3,360 MWh/day × 21 days	\$148,176
IESO fee \$1.1636 /MWh × 3,360 MWh/day × 21 days	\$82,104
Uplift & ancillary charges \$4.20 /MWh × 3,360 MWh/day × 21 days	\$296,352
Subtotal	\$9,534,728
13% (applicable taxes)	\$1,239,515
DEFAULT PROTECTION AMOUNT	\$10,774,242

2. Determining the Amount of Your Prudential Support

Example 5: Default Protection Amount Generator with 200 MW peak generation capacity

Total daily energy production	(3,360) MWh/day
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Default Protection Amount

Energy exposure $3,360 \text{ MWh/day} \times \$102.10 \times 21 \text{ days}$	(\$7,204,176)
DEFAULT PROTECTION AMOUNT	\$ 0

For non-metered market participants: your default protection amount equals your minimum trading limit.

Credit information and payment history

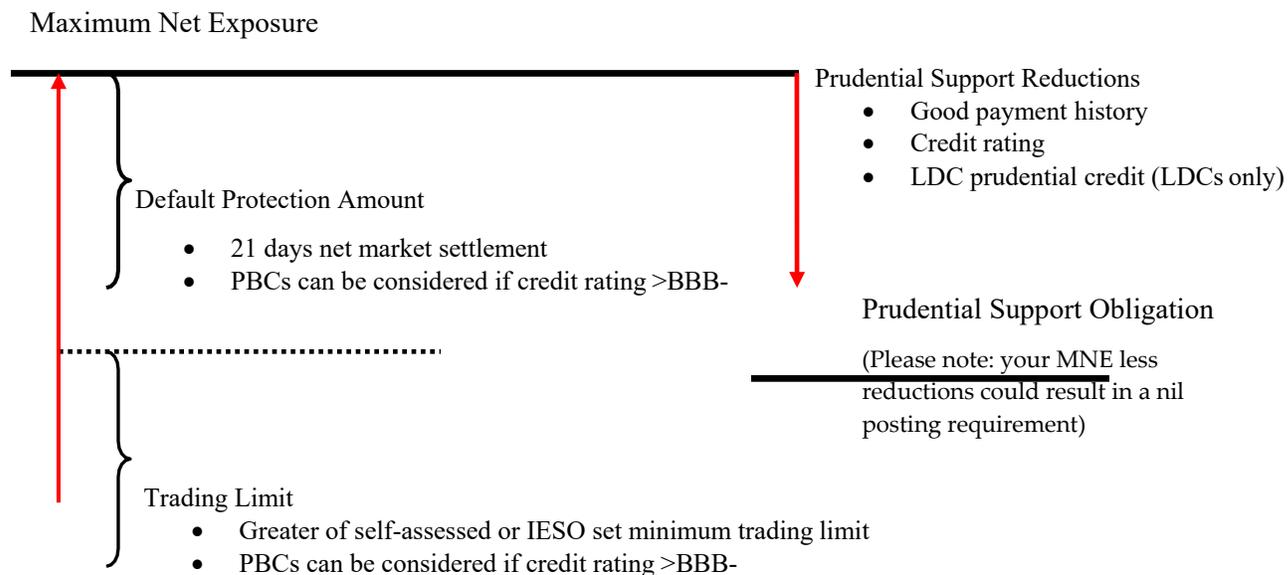
You may be able to use your credit rating information or your payment history to reduce your prudential support amount. Please see Section 4 for more information on reducing your prudential support amount.

Physical bilateral contracts (PBCs)

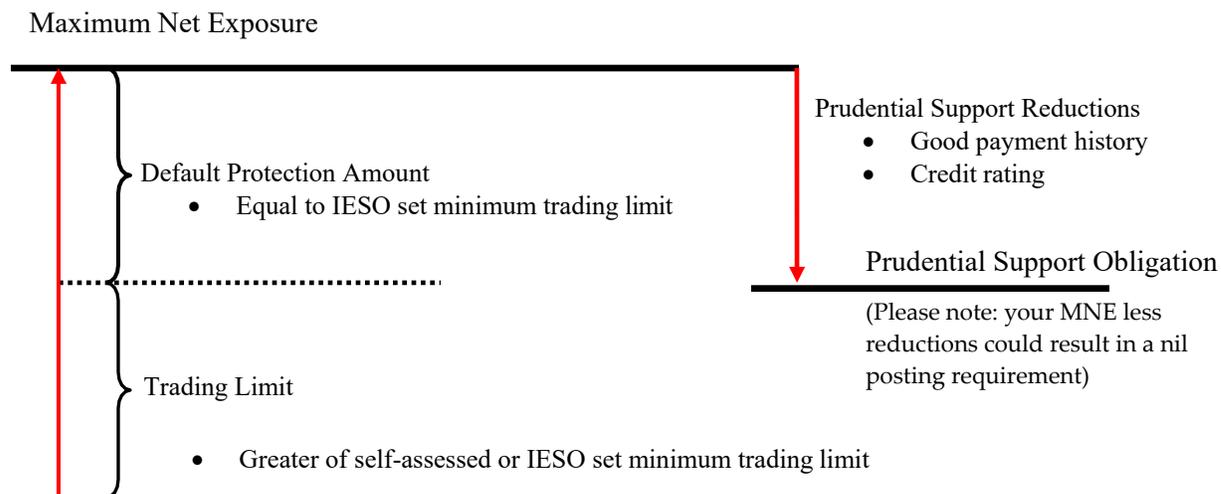
You may have a contract with another market participant to trade electricity directly, rather than through the real-time markets. If you use the IESO settlement process to settle your physical bilateral contract amounts, your prudential support obligation may be affected. Please see Section 5 for details.

2. Determining the Amount of Your Prudential Support

Margin Call Option: Metered Participants



Margin Call Option: Non-Metered Participants



Determining Prudential Support using the No Margin Call Option

If you wish, you may elect the ‘no margin call option’. This means you would not be subject to margin calls, regardless of the level of your actual exposure. (To satisfy a margin call, you must pay a portion of the amount you owe by a set time. For more information on margin calls, please see Section 8.) If you select this option, we will change how we calculate your maximum net exposure. If you select the no margin call option, you cannot claim a reduction in your prudential support for a credit rating, payment history, or – for local distribution companies (LDCs) – the LDC prudential credit (unless you are a ‘small distributor’⁴). You may wish to use the ‘no margin call option’ if you want to avoid the inconvenience and risk of margin calls, and you are able to arrange for low-cost prudential support equal to your maximum net exposure.

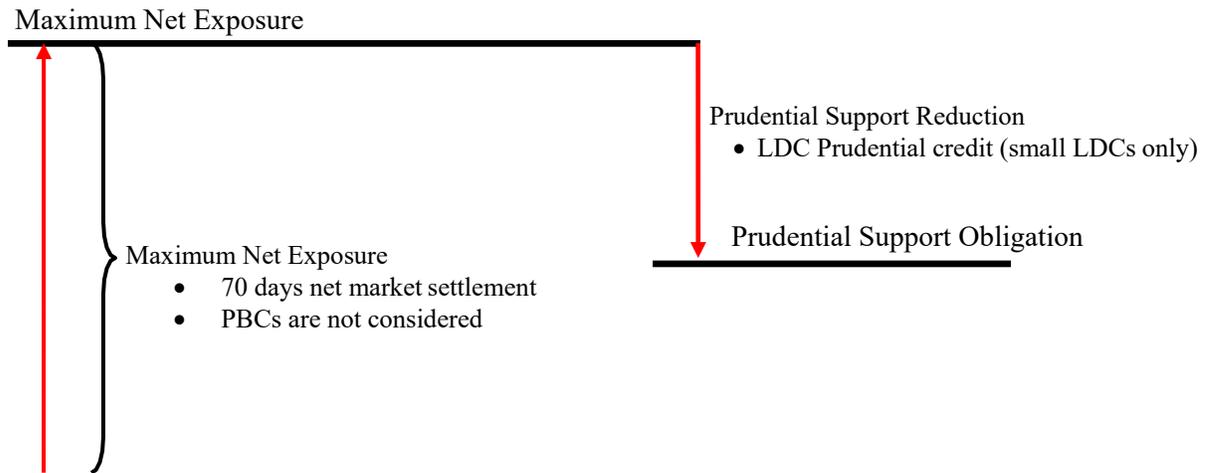
For metered market participants (such as a wholesale consumer): if you select the no-margin call option, we will calculate your maximum net exposure based on 70 days of market activity, instead of on the number of days in the upcoming billing period. In addition, we will not take into account any physical bilateral contracts.

For non-metered market participants (such as marketers): if you select the no margin call option, we will calculate your maximum net exposure as 100% of your estimated net settlement amounts for the upcoming billing period, using the average of your net settlement amounts for the three most recent billing periods where you had market transactions. If you haven’t had any transactions for at least three months, we will use your estimate of net settlement amounts for the upcoming billing period.

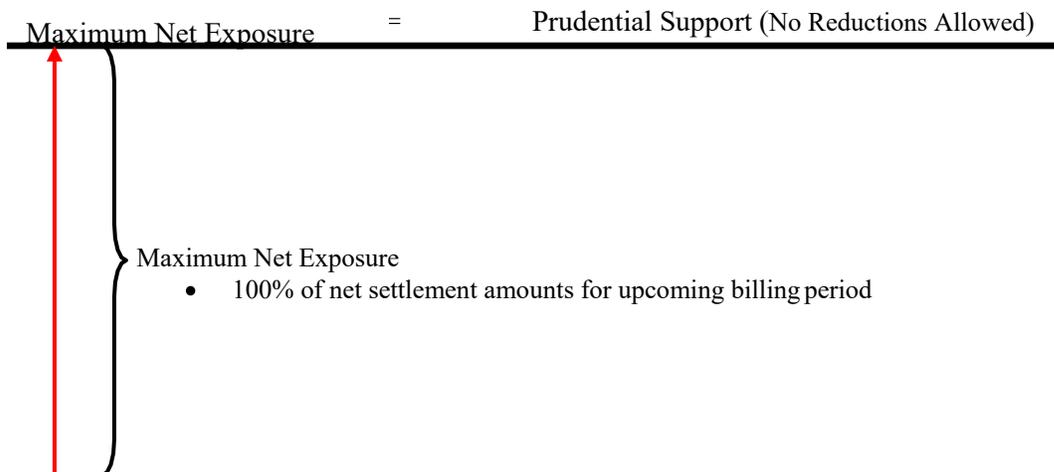
⁴ A ‘small distributor’ is a distributor with a projected annual energy consumption that is not more than 0.25% of the projected total system energy.

2. Determining the Amount of Your Prudential Support

No Margin Call Option: Metered Participants



No Margin Call Option: Non-Metered Participants



3. Posting Your Prudential Support

Once you enter the required information at Online IESO (<https://online.ieso.ca>), the tool will determine your prudential support amount. If you are satisfied with the result, submit it to the IESO for review. If the submission is approved and once the original prudential support has been received by the IESO, we will send you an email notification advising you that the *Prudential Support Obligation – Schedule A* is available in the Prudential Support Obligation tab of the Prudential Manager in the IESO Portal site: <https://portal.ieso.ca/>. This form also shows any allowable reductions used in the calculation of the net amount you have to post (see Section 4 for details on reductions).

At least two weeks before you enter the market, you must post your prudential support with us or with our custodian. The total amount posted with the IESO must be at least as much as the amount determined using Online IESO.

Acceptable types of collateral

You can use the following types of collateral:

- A guarantee or irrevocable commercial letter of credit in a form acceptable to us, provided by:
 - A bank named in a Schedule to the Bank Act, S.C. 1991, c.46., with a minimum long-term credit rating of 'A' from an IESO-approved bond rating agency, *or*
 - A credit union licensed by the Financial Services Commission of Ontario with a minimum long-term credit rating of 'A' from an IESO-approved bond rating agency
- A guarantee in a form that is acceptable to us, provided by a person (other than one of your affiliates) who has a credit rating from an IESO-approved bond rating agency
- Marketable securities in the form of Canadian government treasury bills (treasury bills will be valued as cash at their current market value less two percent, to take market fluctuations into account)
- A guarantee in a form acceptable to us provided by a person who is one of your affiliates and who has a credit rating from an IESO-approved bond rating agency (subject to some limits – please see Market Rules, Chapter 2 for details)
- Cash deposits made with us by you or on your behalf, as long as you meet the following criteria:
 - You were already meeting your prudential support obligation in whole or in part through a cash deposit on November 4, 2004, and
 - Your prudential support obligation was \$200,000 or less on November 4, 2004 and it remains \$200,000 or less

4. Reductions in Your Prudential Support Obligations

You may be able to reduce the amount of your prudential support obligation based on your credit rating or your good payment history.

Reductions due to credit ratings

We may reduce your prudential support obligation relative to your maximum net exposure based on your credit rating from a major bond rating agency on our IESO-approved list. The following table shows the reduction allowed for each credit rating category:

Credit Rating Reductions for Non-distributors

Credit Rating Category (using Standard and Poor's Rating Terminology)	Allowable Reduction in Prudential Support Obligation (For Non-distributors)
AA- and above, or equivalent	100% of maximum net exposure
A-, A, A+ or equivalent	Greater of 90% of maximum net exposure or \$37,500,000
BBB-, BBB, BBB+ or equivalent	Greater of 65% of maximum net exposure or \$15,000,000
BB-, BB, BB+ or equivalent	Greater of 30% of maximum net exposure or \$4,500,000
Below BB- or equivalent	\$0

Credit Rating Reductions for Distributors

Credit Rating Category (using Standard and Poor's Rating Terminology)	Allowable Reduction in Prudential Support Obligation (For Distributors)
AA- and above, or equivalent	100% of maximum net exposure
A-, A, A+ or equivalent	Greater of 95% of maximum net exposure or \$45,000,000
BBB-, BBB, BBB+ or equivalent	Greater of 80% of maximum net exposure or \$22,500,000
BB-, BB, BB+ or equivalent	Greater of 55% of maximum net exposure or \$7,500,000
Below BB- or equivalent	\$0

Example 6: Prudential support obligation for a wholesale customer (with credit rating reduction)

Minimum Trading Limit	\$6,915,922
Default Protection Amount	+ \$11,931,806
Maximum Net Exposure :	\$18,847,728
Allowable reduction for credit rating, assuming a BBB rating :	
Greater of : 65% of Maximum Net Exposure (\$12,251,023) or (\$15,000,000)	
Allowable reduction for credit rating (\$15,000,000)	

4. Reductions in Your Prudential Support Obligations

Reductions due to payment history

We may reduce your prudential support obligation on evidence of good payment history for your electricity purchases in Ontario.

If you have a credit rating from a major bond rating agency on the IESO-approved list, you cannot have a reduction for good payment history.

Reduction amounts for good history payment

If you are not a distributor:

Good Payment History	Allowable Reduction in Prudential Support Obligation (for non-distributors)
Six years or more	The lesser of \$12,000,000 or 50% of maximum net exposure
Five or more years but less than six years	The lesser of \$7,500,000 or 30% of maximum net exposure
Four or more years but less than five years	The lesser of \$6,000,000 or 25% of maximum net exposure
Three or more years but less than four years	The lesser of \$4,500,000 or 20% of maximum net exposure
Two or more years but less than three years	The lesser of \$3,000,000 or 15 % of maximum net exposure
Less than two years	\$0

Example 7:

Prudential support obligation for a wholesale customer (with reduction for 3.5 years good payment history)

Maximum Net Exposure :	\$12,847,728
Allowable reduction for payment history (Lesser of \$4,500,000 or 20% of maximum net exposure)	\$2,569,546
Total Prudential Support Obligation:	\$10,278,182

4. Reductions in Your Prudential Support Obligations

If you are a distributor:

Good Payment History	Allowable Reduction in Prudential Support Obligation (for distributors)
Six or more years	The lesser of \$14,000,000 or 80% of maximum net exposure
Five or more years but less than six years	The lesser of \$9,000,000 or 65% of maximum net exposure
Four or more years but less than five years	The lesser of \$7,500,000 or 45% of maximum net exposure
Three or more years but less than four years	The lesser of \$6,000,000 or 35% of maximum net exposure
Two or more years but less than three years	The lesser of \$4,500,000 or 25% of maximum net exposure
Less than two years	\$0

Reductions due to provision of prudential support by distributor's customers (available to local distribution companies only)

If you are a distributor, and:

- You have not selected the no margin call option, or
- You qualify as a small distributor,

we will reduce your prudential support obligation by 60% of the qualifying prudential support you have collected from your customers. You must provide us with an affidavit (use Form AFF_0001) and proof of these amounts.

We will deduct 60% of your collection of prudential support from your maximum net exposure before applying any other prudential support obligation deductions.

5. Impact of Physical Bilateral Contracts

A physical bilateral contract is an agreement between a seller and a buyer to trade electricity directly, rather than through the real-time markets. If you use the IESO settlement process to settle the contract amounts, the contracted quantities of electricity:

- Decrease the amount we owe to the seller
- Decrease the amount the buyer owes us

This lowers the buyer's actual exposure, and raises the seller's actual exposure.

Impact on buyers

(Please note that only the seller can submit the physical bilateral contract to us for inclusion in our settlements process.)

If your physical bilateral contract is part of our settlement process, we will not include the dollar amount associated with the contract when we calculate your real-time energy charges. This will lower your actual exposure. You may wish to factor this in when calculating your self-assessed trading limit so that you do not post unnecessary prudential support.

Depending on how your contract is drawn up, you may still have some charges such as transmission, debt reduction, etc. Keep in mind that you should include these charges when you calculate your self-assessed trading limit.

Impact on sellers

(Please note that only the seller can submit the physical bilateral contract to us for inclusion in our settlements process.)

If you submit the contract to us, we will not include the dollar amount associated with the contract when we calculate your real-time energy payment. This will raise your actual exposure, and you will need to factor this in when you calculate your self-assessed trading limit.

If you are injecting at least as much electricity into the grid as the amount of your contract, you will likely remain a net creditor to the market – that is, your actual exposure will remain negative and you will not have to post prudentials. This would also be the case if you have a back-up physical bilateral contract with another generator for at least the contracted amount. In either of these cases, there would be no impact on your actual exposure.

5. Impact of Physical Bilateral Contracts

Keep in mind that there is a risk that you may have to buy energy from the real-time market to meet your physical bilateral contract obligation to the buyer. This could happen if your generation or back-up generation does not actually inject the contracted amount into the grid – you could become a net debtor to the market. If this happens, your actual exposure could become a positive amount and you would be subject to a margin call. (See Section for information on margin calls.)

6. Maintaining Your Prudential Support

You must maintain your prudential support at all times. However, your maximum net exposure and your obligations may change depending on your activities and on conditions in the marketplace. For example, price fluctuations may affect your trading levels.

You need to keep us informed with information about your operations, your credit rating and the status of your existing prudential support. We assess your market activity on a regular basis (see below). You also need to let us know when there are changes to your information – for example, if part of your prudential support is due to expire.

IESO review

We review your minimum trading limit, trading limit, default protection amount and maximum net exposure:

- Before each billing period
- Within two business days after your actual exposure exceeds your trading limit
- Within two business days after receiving notice from you of a change in status that would affect your maximum net exposure (e.g., operational changes, such as increase or decrease in load, peaks, etc.)
- For non-metered market participants: if we have adjusted your trading limit after you have not had any transactions in the market for three months
- If we have adjusted our price basis (see Appendix A for details)

If your maximum net exposure changes as a result of our review, we will send you an updated Schedule A. If you need additional prudential support as a result of the change to your maximum net exposure, you must provide it within five business days from the effective date of the change.

Other circumstances that could change your prudential support obligation

- If your prudential support obligation has been reduced based on your credit rating or payment history, and there is a change to your credit rating or payment history, your prudential support obligation may change. If you need to add to your prudential amount, you will have five business days to provide the additional amount.
- If any part of your prudential support is due to expire, you must provide a replacement that comes into effect no later than the expiry date. You must provide the replacement at least 10 days before the expiry date.
- If any part of your prudential support is no longer current or if it becomes invalid, you must provide a replacement within two business days.

6. Maintaining Your Prudential Support

- If we draw or claim any part of your prudential support, you must provide a replacement within five business days of receiving notice from us.
- If an event of default occurs as defined in Chapter 3 of the Market Rules.

7. Calculating Your Actual Exposure

We verify that each market participant has provided enough prudential support to cover their trading activity in the real-time markets. We calculate your actual exposure and compare it to your trading limit. (We do not carry out this step for market participants who have elected the no margin call option – see Section 8 for information on margin calls.)

Your actual exposure is the sum of the following three amounts:

- Amount of prepayments on account
- Amount settled but not invoiced – this is the total of amounts on your preliminary and final settlement statements that have not yet been billed to you, plus the settlement amount that has been calculated but has not yet appeared on a settlement statement
- Amount cleared but not settled:
 - **Dispatchable participants:**
This is the net amount of dispatched energy and operating reserve that has not yet been settled.
 - **Non-dispatchable participants:**
We do not use this category. Instead:
 - For metered market participants:** we use an estimated amount, based on average actual consumption observed for the past six days. We also take into account the OEB regulated price plan and, for non-distributors, the average hourly Ontario energy price (HOEP) for the trade day.
 - For non-metered market participants (e.g., retailers, marketers):** This is the sum of bids/offers for the past six days that has not yet been settled.
 - For all participants, we include an estimate of other settlement charges (e.g., debt reduction fee, transmission tariffs, etc.)

If your actual exposure reaches a certain percentage of your prudential support obligation, we will issue a margin call warning or a margin call as applicable.

Global adjustment

The global adjustment is the difference between the total payments made to certain contracted or regulated generators and demand management projects, and any offsetting market revenues. The adjustment may be positive or negative, and appears as a debit or a credit on your monthly invoice.

When the global adjustment is a credit, including it in your daily actual exposure reduces your daily actual exposure. If the global adjustment is a debit, including it increases your daily actual exposure. (Please note that we use the estimated global adjustment amount, which may be different from the actual global adjustment amount that appears on your monthly invoice.)

Customers with an average peak demand over five megawatts (MW) during a defined Base Period will be considered 'Class A' customers. The monthly GA amounts for these customers will be based on their coincident peak demands. This change is a result of [Regulation 398/10](#) amending Regulation 429/04.

GA amounts for 'Class A' customers will now be based on the percentage that their peak demand contributes to overall system demand during the five peak hours of a defined Base Period.

For 'Class A' customers, we will adjust the Estimated Energy Price which is used to determine the amount of prudential support required as follows:

$$(\text{Average RPP} - \text{RPP GA}) + [(\text{Total GA} * \text{PDF}) / \text{Estimated Annual Consumption}]$$

As defined :

Average RPP is the Ontario Energy Board's estimate of Average Supply Cost for RPP Consumers (\$ / MWh).

RPP GA is the Impact of the Global Adjustment (\$ / MWh) on the Average Supply Cost.

Total GA is Ontario Energy Board's estimate of the total annual Global Adjustment cost.

PDF is the Peak Demand Factor assigned to each 'Class A' customer based on their five coincident peak demands.

Estimated Annual Consumption is the estimated annual electricity consumption for the customer

8. Margin Calls

Your actual exposure represents the size of your debt in the marketplace. Your trading limit represents your credit limit.

Credit warning

If your actual exposure reaches 70% of your trading limit, we will issue you a warning. A generic email notification is sent to you and you must log in to the Prudential Manager in the IESO Portal to view the warning details (see Appendix B). If you receive a warning, you may wish to make a prepayment to reduce your actual exposure, or you may take other action to ensure that your actual exposure does not reach your trading limit. (You are not required to do this.)

Margin call

If your actual exposure equals or exceeds your trading limit, we will issue you a margin call requiring you to bring your actual exposure back within acceptable limits. A generic email notification is sent to you and you must log in to the Prudential Manager in the IESO Portal to view the margin call details (see Appendix B).

- To satisfy a margin call, you must pay a portion of the amount owed so that your actual exposure is no higher than 75% of your trading limit. (We do not pay interest on these payments.)
- You must make the payment by 4:00 p.m. on the second business day following the date of the margin call.

9. Market Participant Default and the Default Levy

There are circumstances where a market participant is considered to be in default. For example, this happens if the participant:

- Does not pay an invoice within the two-day remittance period,
- Does not provide the required prudential support within the specified time limits, or
- Does not satisfy a margin call.

Within two business days of the default, we may send the defaulting market participant a default notice or a notice of intent to begin suspension proceedings:

- If the participant does not remedy the default amount within the time specified in the notice, we may take action to suspend the defaulting market participant and recover the payment from the participant's posted prudential support
- Defaulting participants are also responsible for default interest, as well as any costs or expenses we incur as a result of their default

For the default notice a generic email notification is sent to you and you must log in to the Prudential Manager in the IESO Portal to view the details (see Appendix B).

Default levy

Keep in mind that the IESO does not assume the debt in case of a payment default – instead we would issue a default levy to non-defaulting participants. If we cannot recover all of the default amount from the defaulting participant, we will issue a 'Notice of Default Levy' to all non-defaulting market participants who were active in the real-time markets at the time of the default. Under the default process:

- The 'Notice of First Default Levy' provides details about the default and the amount of the first levy. It includes an estimate of the amount of the second default levy, if one is necessary. We issue the notice at least 10 days before the first default levy is invoiced.
- The second default levy accounts for any outstanding amounts. We issue the notice of the second levy at least 10 days before the levy is invoiced.

10. Summary of Your Steps

- During the market entry process, provide and submit the required information through Online IESO <https://online.ieso.ca/>.

If the submission is approved you need to post your prudential support. Once we've received your prudential support we will send you an email notification advising you that the *Prudential Support Obligation – Schedule A* is available in the Prudential Support Obligation tab of the Prudential Manager in the IESO Portal site:

<https://portal.ieso.ca/>.

- For sellers with physical bilateral contracts: let us know if you wish to have the contract settled through the IESO settlement process.
- If you are an LDC claiming the LDC prudential credit reduction:
 - Send us your affidavit showing the amount of collateral you have collected from your customers (use Form AFF_0001)
 - Attach copies of bank statements showing any cash deposits and any letters of credit, guarantees, or Government of Canada T-bills you hold as prudential support
- Keep us informed of any changes to your operations that might impact your prudential support obligation.
- Submit any update to your self-assessed trading limit at least 7 days prior to the billing period to which you want it to apply
- Monitor your posted prudential support for expiring or terminating securities or letters of credit.

11. Summary

In the real-time electricity markets, we cannot recover the physical commodity if the buyer is unable to pay – the electricity has already been consumed. Because of this, participants in the IESO real-time markets must provide collateral to cover any amount that they might owe to the market if their company is unable to make a payment.

We determine the amount of collateral (called prudential support) you must post by considering information you provide about your expected energy injections and withdrawals, your estimated peak load, your expected net settlement amount (for non-metered participants) and your role in the market.

We may reduce the amount of your prudential support depending on your credit rating and your payment history, and the amount may also be increased or decreased if you have physical bilateral contracts that we settle.

The IESO does not assume the debt in case of a payment default – instead we would issue a default levy to non-defaulting participants. To avoid this happening, we monitor your actual exposure to ensure that it does not exceed a certain percentage of your posted prudential support – we may issue a margin call warning or a margin call if this happens.

Additional information

For additional information about prudentials, please refer to:

- Market Rules, Chapter 2
- Market Manual 5.4
- Prudentials Online: <http://www.ieso.ca/Online-IESO>
- Your account manager

Appendix A

Price Basis Used to Determine Minimum Trading Limit and Default Protection Amount

The energy prices in this guide are for illustrative purposes only – they are based on the Ontario Energy Board's (OEB's) price forecasts under its regulated price plan (RPP):

- The energy price basis for distributors is the lower tier RPCMT1.
- The price for other market participants is the average RPP forecast by the OEB.
- We review the price basis annually. If there is a change of 15% or more from what we are currently using, we will change the basis for our prudential calculations.

Example:

Assumptions:

- Base year is April Year 1 – price basis published in the OEB Price Report and established as the prices used by the IESO:
 - Distributors: RPCMT1 as reported by the OEB = \$55/MWh
 - All other market participants: RPP supply cost as reported by the OEB = \$58.95/MWh
- October Year 1 – Price basis published in the OEB Price Report:
 - Distributors: RPCMT1 as reported by the OEB = \$46.00/MWh
 - All other market participants: RPP supply cost as reported by the OEB = \$50.00/MWh
- April Year 2 – Price basis published in the OEB Price Report:
 - Distributors: RPCMT1 as reported by the OEB = \$60.00/MWh
 - All other market participants: RPP supply cost as reported by the OEB = \$63.00/MWh

Case 1:

Applicant XYZ Company, a metered market applicant who is a non-distributor, applies to become a market participant on October 1, Year 1.

The price basis used in the IESO's calculation of the minimum trading limit and default protection amount is \$58.95/MWh, even though the October Year 1 price basis published in the OEB Price Report has changed by more than 15%.

This is because \$58.95/MWh was established as the price basis in April, Year 1 and is in effect until the next annual review which will occur in April, Year 2.

Case 2:

Applicant LDC Company, a metered market applicant who is a distributor, applies to become a market participant on November 1, Year 2.

The price basis used in the IESO's calculation of the minimum trading limit and default protection amount for this distributor is \$55.00/MWh.

Because the annual review in this example occurs in April of each year, we can compare the established price basis to the current OEB forecast:

- First, we must identify the 15% price range to determine if the IESO-established price basis should change.
- The price range is determined using the established price basis of \$55.00/MWh from April Year 1 and is \$63.25/MWh to \$46.75/MWh.
- We will change the price basis only if the price is equal to or greater than the higher end of the range, or equal to or lesser than the lower end of the range.

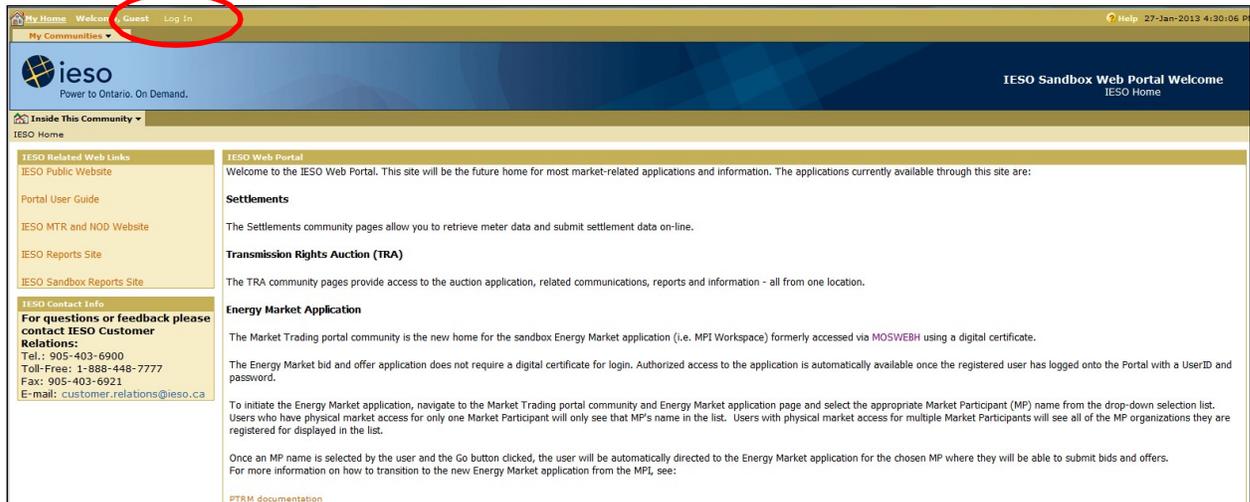
In this case, the RPCMT1 price basis published by the OEB in April Year 2 is \$60.00/MWh, falling within the 15% price range. Therefore, our price basis will remain at the \$55.00/MWh price established in April Year 1.

Appendix B

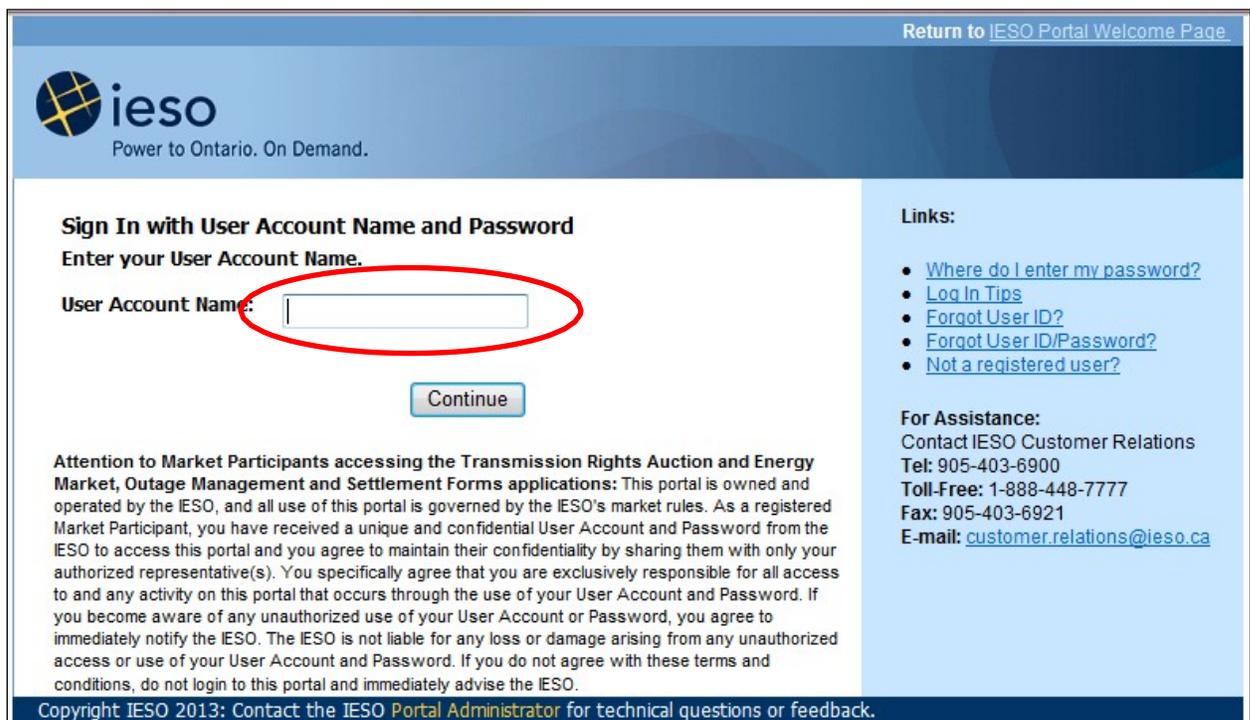
ACCESSING PRUDENTIAL INFORMATION USING PRUDENTIAL MANAGER

1. Logging In

Go to the Portal web page: <https://portal.ieso.ca>. Click on **Log In**.



Enter the **User Account Name** supplied by the IESO and click **Continue**:



Type your **Password** and click **Enter**:



Return to [IESO Portal Welcome Page](#)

ieso
Power to Ontario. On Demand.

Sign In:
Please type your password and then click on the "enter" button.

Password:

ieso
Power to Ontario.
On Demand.
29/01/2013 15:20 (EST)
enter

Links:

- [Where do I enter my password?](#)
- [Log In Tips](#)
- [Forgot User ID?](#)
- [Forgot User ID/Password?](#)
- [Not a registered user?](#)

For Assistance:
Contact IESO Customer Relations
Tel: 905-403-6900
Toll-Free: 1-888-448-7777
Fax: 905-403-6921
E-mail: customer.relations@ieso.ca

What's this?
[Forgot your password?](#)

Attention to Market Participants accessing the Transmission Rights Auction and Energy Market, Outage Management and Settlement Forms applications: This portal is owned and operated by the IESO, and all use of this portal is governed by the IESO's market rules. As a registered Market Participant, you have received a unique and confidential User Account and Password from the IESO to access this portal and you agree to maintain their confidentiality by sharing them with only your authorized representative(s). You specifically agree that you are exclusively responsible for all access to and any activity on this portal that occurs through the use of your User Account and Password. If you become aware of any unauthorized use of your User Account or Password, you agree to immediately notify the IESO. The IESO is not liable for any loss or damage arising from any unauthorized access or use of your User Account and Password. If you do not agree with these terms and conditions, do not login to this portal and immediately advise the IESO.

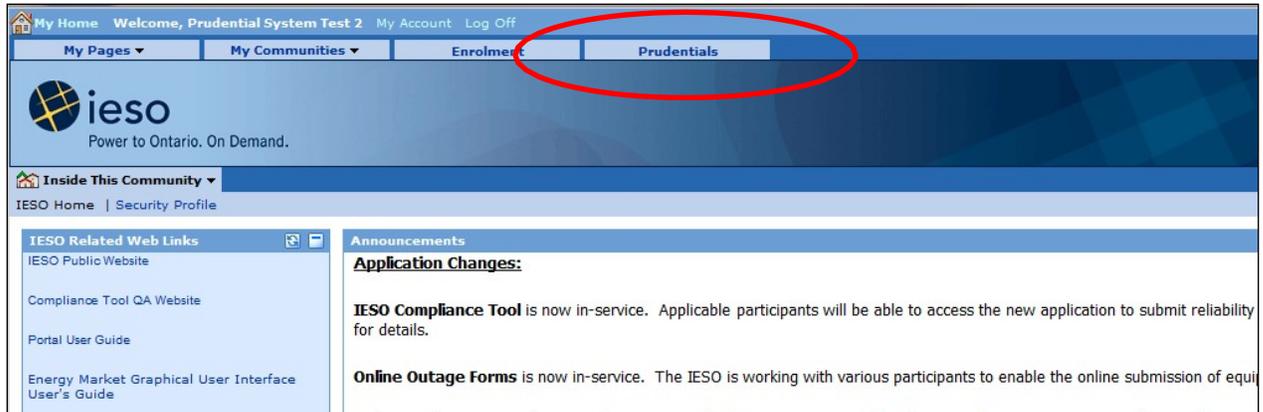
Copyright IESO 2013: Contact the [IESO Portal Administrator](#) for technical questions or feedback.

If you use an IESO-supplied password to log in, you will be prompted to create a new password, known only to you. Follow the instructions on the screen to complete this step. You will also be asked to set up a Security Profile (this is a mandatory step, beginning in Sandbox on February 24 and in Production on March 6, 2013). Follow the prompts on the screen.

Further information is available in the Guide to the IESO Portal is found at:
<http://www.ieso.ca/Documents/training/portal.pdf>

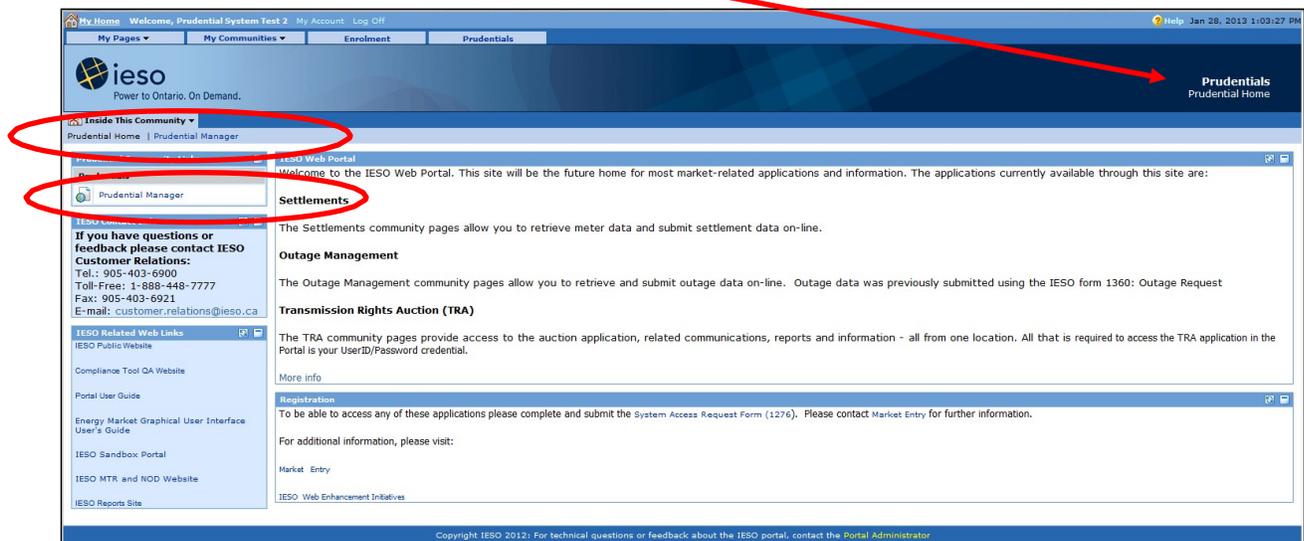
2. Access the Prudentials community and Prudential Manager

After logging in, click on the **Prudentials** community tab at the top of the IESO Web Portal Welcome page.



If you do not see the Prudentials community tab, please contact IESO Customer Relations for assistance. You will be required to submit Form 1276 to gain access.

The page will now be titled **Prudentials**. Click on one of the links to the **Prudential Manager**:

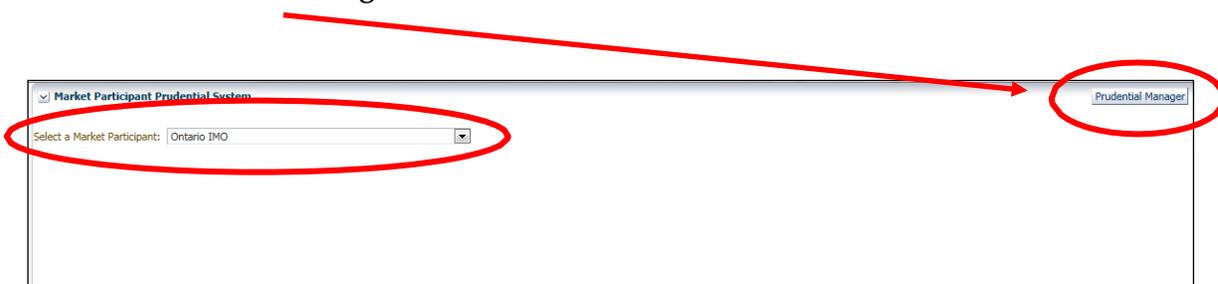


The first page of the **Prudential Manager** will launch in a new web browser tab:



Choose your company by clicking on the correct name in the **Select a Market Participant** drop-down menu. You will only see multiple options if you are the Prudential Requirements contact for more than one market participant.

Click on **Prudential Manager** to continue.



You will see the name of your company displayed at the top of the page, along with 8 Prudential Manager tabs (you can only view the information in one tab at a time):



The tabs are:

- **Estimated Net Exposure:** Information about estimated net exposure is included, based on real-time settlement data provided on a daily basis and estimates made by the IESO.
- **Margin Call Warnings:** If your Estimated Net Exposure reaches 70% of your trading limit, a Margin Call Warning is issued. A generic email notification is sent and the details are found in this tab.
- **Margin Calls:** If your Estimated Net Exposure equals or exceeds your trading limit, a Margin Call is issued. A generic email notification is sent and the details are found in this tab.

Margin calls must be satisfied with a payment by 4:00 p.m. on the second business day following the date of the margin call. The Margin Call tab provides the ability to notify the IESO of this prepayment.

- **Prudential Support Obligation:** The amount of Prudential Support that must be provided to the IESO is detailed in this tab. This information is included for your reference.

- **Prudential Support Posted:** Details of the type and amount of Prudential Support provided to the IESO to satisfy the Prudential Support Obligation are available here for your reference.
- **Prudential Support Reassessments:** A record of any changes to your Prudential Support Obligation is found here. If your obligation changes, you will be notified with a generic email that the details can be found in this tab.

Prudential Support Reassessments must be satisfied within five business days of the date the reassessment was issued.

- **Notification of Prepayments:** A record of the past 365 days of online Notification of Prepayments submitted to the IESO is found here. This tab also provides the opportunity to submit the details of a new Notification of Prepayments.

Please note that submitting the notification online does not complete the step of arranging the bank transfer to the IESO.

- **Default Notices:** There are circumstances where a market participant is considered to be in default of the Market Rules. In this instance, a default letter is issued and the details are found in this tab. A record of any past default notices is also stored here.

3. Prudential Manager Features

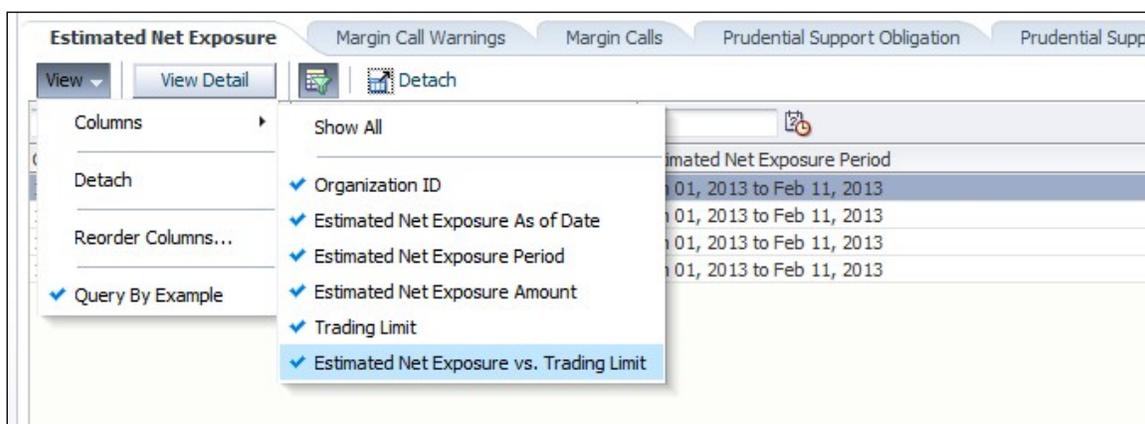
The tabs have several features in common. All have the ability to **view**, **detach**, **sort** and **search** the records, and some tabs also have the ability to **show history**, **view details**, **export** and **print** records.

This section details how to use these within features.

3.1 View

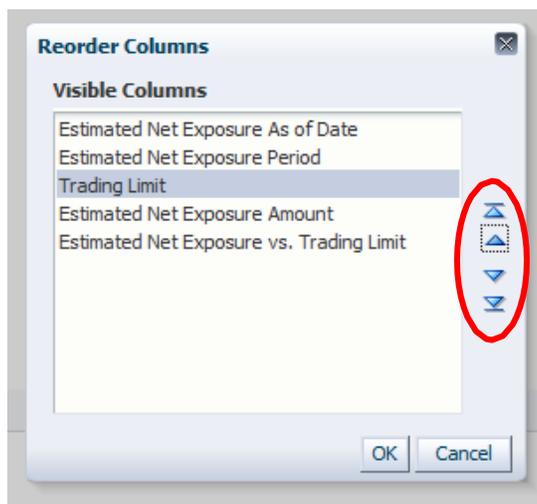
The **View** drop-down menu offers four options.

Columns, shown expanded in the image below, allows you to check or uncheck the columns you want to have visible in each tab:



Detach removes the frames around the tab and opens the information within its own window. This can be useful for printing the screen.

Reorder Columns... provides a window where the order of the columns can be rearranged. Select a column name, then click the up and down arrows in the pop-up box to change the order. Click **OK** to make changes to the tab view.



Query by Example displays the search boxes at the top of each column when it is checked. Click on the Query by Example to uncheck it and remove the search boxes.

Sort Move the mouse over the headers of each column until up and down arrows appear. It is possible to click on these to sort the information in the column by ascending or descending order.

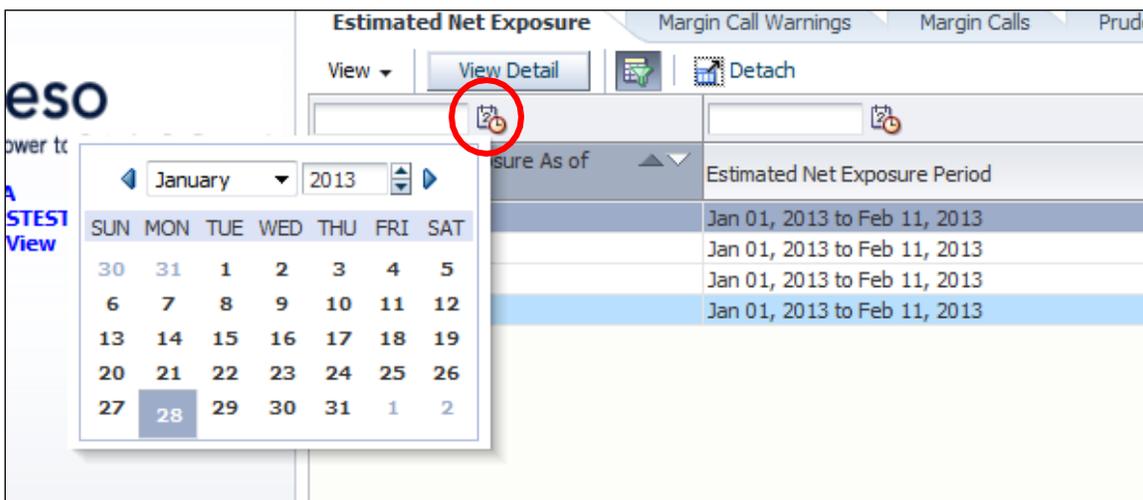
3.2 Search function

When **Query by Example** is selected, search boxes appear at the top of each column:



Date	Estimated Net Exposure Period	Trading Limit	Estimated Net Exposure Amount	Estimated Net Exposure vs. Trading Limit
1/10/2013	Jan 01, 2013 to Feb 11, 2013	\$105,254,090.00	\$35,212,468.23	33%
1/13/2013	Jan 01, 2013 to Feb 11, 2013	\$105,254,090.00	\$37,553,294.34	36%
1/15/2013	Jan 01, 2013 to Feb 11, 2013	\$105,254,090.00	\$30,646,518.76	29%
1/22/2013	Jan 01, 2013 to Feb 11, 2013	\$105,254,090.00	\$49,502,110.00	47%

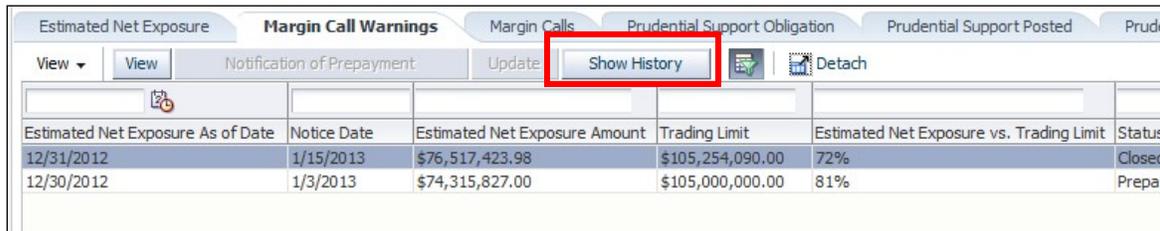
Click on the calendar and clock icon to view a pop-up calendar. Select a date and press the Return (Enter) key to search by date in the column. The search results will appear on the screen.



For columns without a calendar icon, type the search term you wish to find at the top of the particular column where you expect to find the record and press the Return (Enter) key to view the search results.

3.3 Show History

In some tabs, such as the **Margin Call Warning** and **Margin Call** tabs, only the most recent records will be displayed at first, even though 365 days worth of records are available via Prudential Manager. To view and search all records, click on the **Show History** button:

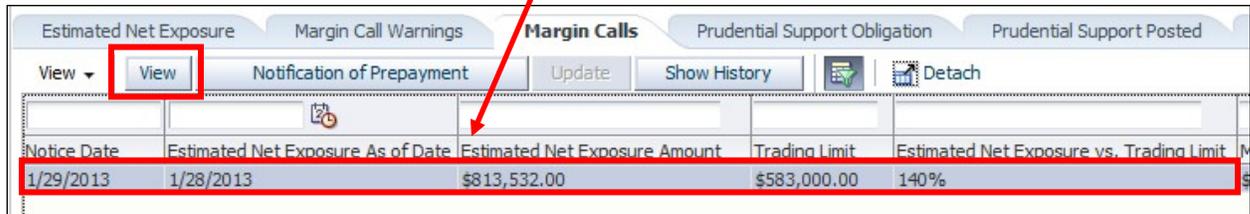


Estimated Net Exposure As of Date	Notice Date	Estimated Net Exposure Amount	Trading Limit	Estimated Net Exposure vs. Trading Limit	Status
12/31/2012	1/15/2013	\$76,517,423.98	\$105,254,090.00	72%	Closed
12/30/2012	1/3/2013	\$74,315,827.00	\$105,000,000.00	81%	Prepa

3.4 View Details

In some tabs, there is more information associated with a record. In the **Estimated Net Exposure** tab, this information is accessed with the **View Detail** button. For the other tabs, the **View** button (found next to the View drop-down menu) is used. If the button is grayed out, it is not active. Either there is no data available to view, or there is no record selected.

To see more information, click on the record line that you want to view and then click the **View** button:

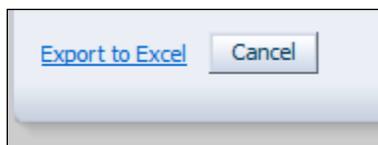


Notice Date	Estimated Net Exposure As of Date	Estimated Net Exposure Amount	Trading Limit	Estimated Net Exposure vs. Trading Limit
1/29/2013	1/28/2013	\$813,532.00	\$583,000.00	140%

A pop up window will show the details of your record.

3.5 Export, Save and Print Details

After you have clicked on **View**, the pop-up window containing details offers two options at the bottom-left corner of the page:



Clicking on **Cancel** will close the box (this can also be done by clicking the **X** at the top-right corner).

Clicking on **Export to Excel** will provide the same information in a similar format in an Excel file. You can then save or print this file from Excel, or copy the data for use in another spreadsheet or application.

After you click on **Export to Excel**, a confirmation box will appear:



Click on **Open** or **Save** to see the file in Excel. **Cancel** will end the request.

Once the Excel file is created, it is possible to **save** the document in another format, such as PDF, or to **print** a copy.

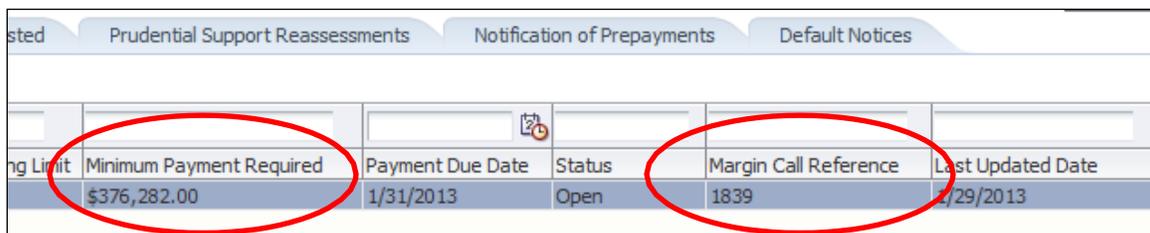
4. Submit a Notification of Prepayment

The **Notification of Prepayments** tab provides a record of all Notification of Prepayments that have been submitted to the IESO through Prudential Manager in the past 365 days. Note that any prepayments made in the last year using a faxed paper form or email will not be shown in this tab.

Notifications of Prepayment are sent to the IESO when you are going to process a payment to the IESO. You can also submit a Notification of Prepayment if you decide to make a prepayment on your own, without one having been requested by the IESO.

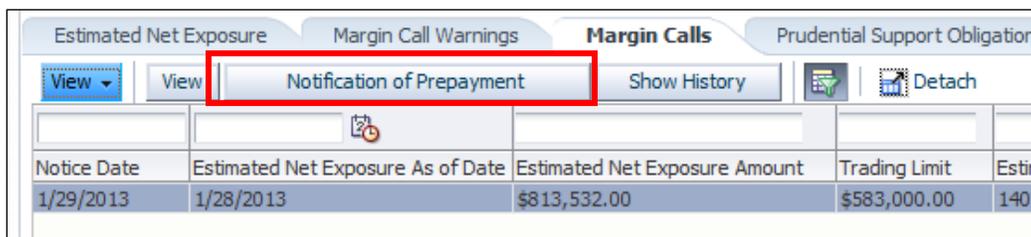
4.1 Make a Notification of Prepayment from an existing record

To notify the IESO that you intend to make a payment for a specific **Margin Call**, you can use the **Notification of Prepayment** button located in the tab. Highlight the item that you would like to pay. The record will show the **Minimum Payment Required**. It can be changed in the **Notification of Prepayment** if you are paying a different amount. Another item to note is the **Margin Call Reference**, which is used consistently for any records related to this particular Margin Call.



Trading Limit	Minimum Payment Required	Payment Due Date	Status	Margin Call Reference	Last Updated Date
	\$376,282.00	1/31/2013	Open	1839	1/29/2013

When the correct item is highlighted, click on **Notification of Prepayment**:



Notice Date	Estimated Net Exposure As of Date	Estimated Net Exposure Amount	Trading Limit	Estim
1/29/2013	1/28/2013	\$813,532.00	\$583,000.00	140%

A pop-up box will appear, pre-populated with the details of the payment you are making. Mandatory fields are indicated with a *. Ensure that each is filled in.

Margin Call ✕

Organization ID

Name

* Date of Deposit 

* Market Type Physical ▼

* IESO Bank Name TD Bank ▼

Reason for Prepayment Margin Call

Reference Number 1839

* Amount of Prepayment

Comments

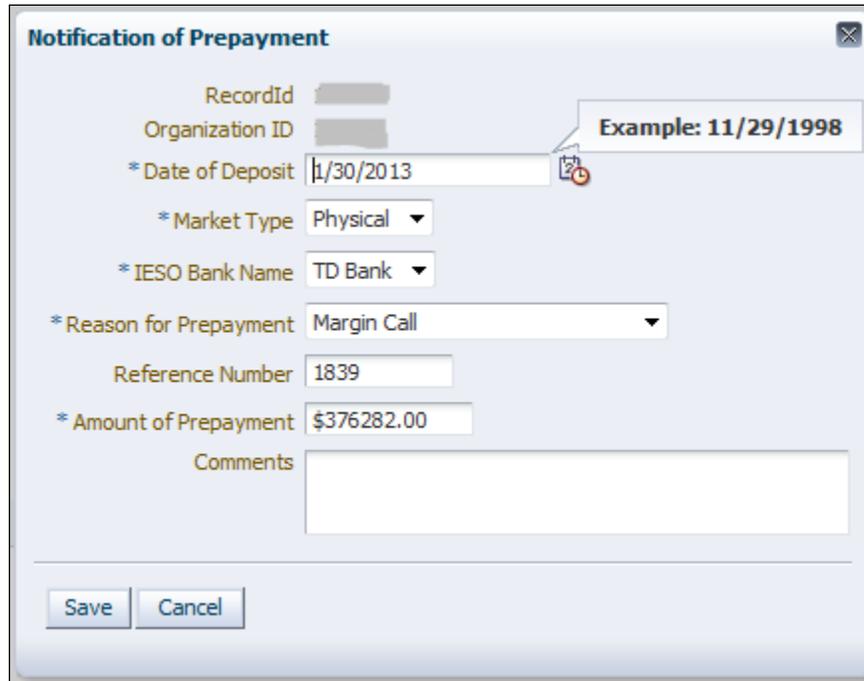
Click **Save** to submit the Notification of Prepayment information to the IESO. Please note that submitting this notification online *does not* complete the step of arranging the bank transfer to the IESO.

To view a **Notification of Prepayment** that you have submitted in Prudential Manager, click on the **Notification of Prepayments** tab. The notification will now be shown, with the **Reference Number** for the Margin Call:

Estimated Net Exposure Margin Call Warnings Margin Calls Prudential Support Obligation Prudential Support Posted Prudential Support Reassessments Notification of Prepayments Default Notices								
View <input type="button" value="View"/> <input type="button" value="Create New"/> <input type="button" value="Update"/> <input type="button" value="Show History"/> <input type="button" value="Detach"/>								
Date of Deposit	Market Type	IESO Bank Name	IESO Bank Account Number	Reason for Prepayment	Amount of Prepayment	Reference Number	Last Updated Date	Last Updated User
1/30/2013	Physical	TD Bank	<input type="text"/>	Margin Call	\$376,282.00	1839	1/30/2013	MPPSTEST
1/30/2013	Physical	TD Bank	<input type="text"/>	Prepayment	\$10,000.00		1/29/2013	MPPSTEST

4.2 Modify a Notification of Prepayment that has been submitted

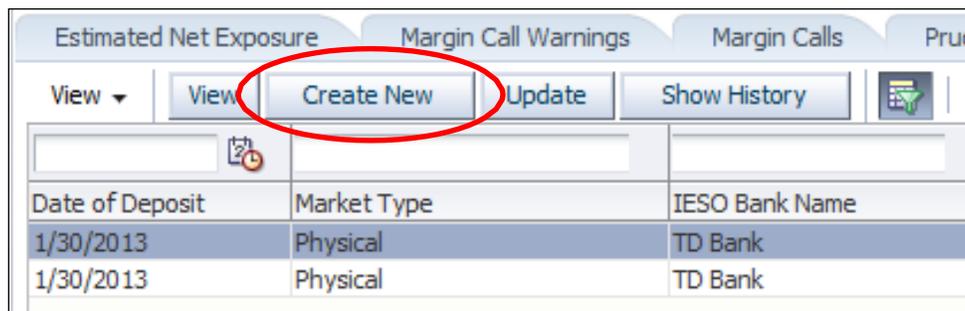
You can modify a **Notification of Prepayment** that has been submitted, as long as the date is in the future. To edit the notification, click **Update** to see a new pop-up window. If you can no longer make changes, the **Update** button will be grayed out.



Make any necessary changes and click **Save**. The edited record will show in the tab.

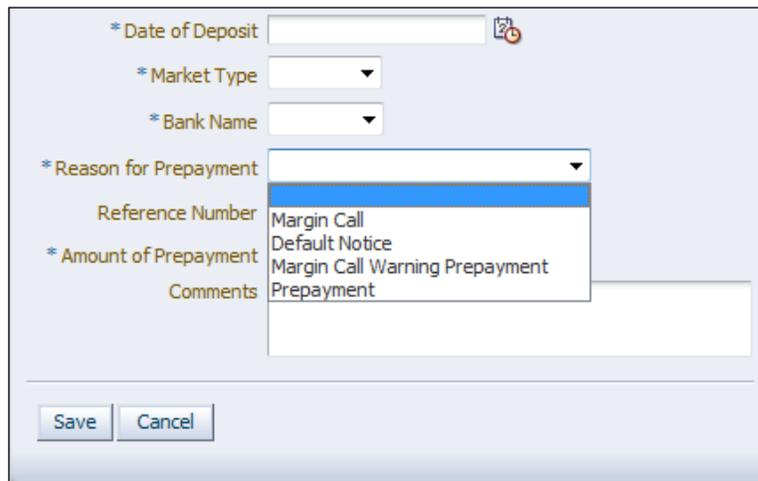
4.3 Initiate a Notification of Prepayment

You may wish to make a prepayment without having been advised by the IESO that a payment is required. To notify the IESO of this payment, go to the **Notification of Prepayment** tab and click the **Create New** button.



Date of Deposit	Market Type	IESO Bank Name
1/30/2013	Physical	TD Bank
1/30/2013	Physical	TD Bank

A pop-up window will appear, with blank fields for you to complete.



* Date of Deposit 

* Market Type

* Bank Name

* Reason for Prepayment

Reference Number

* Amount of Prepayment

Comments

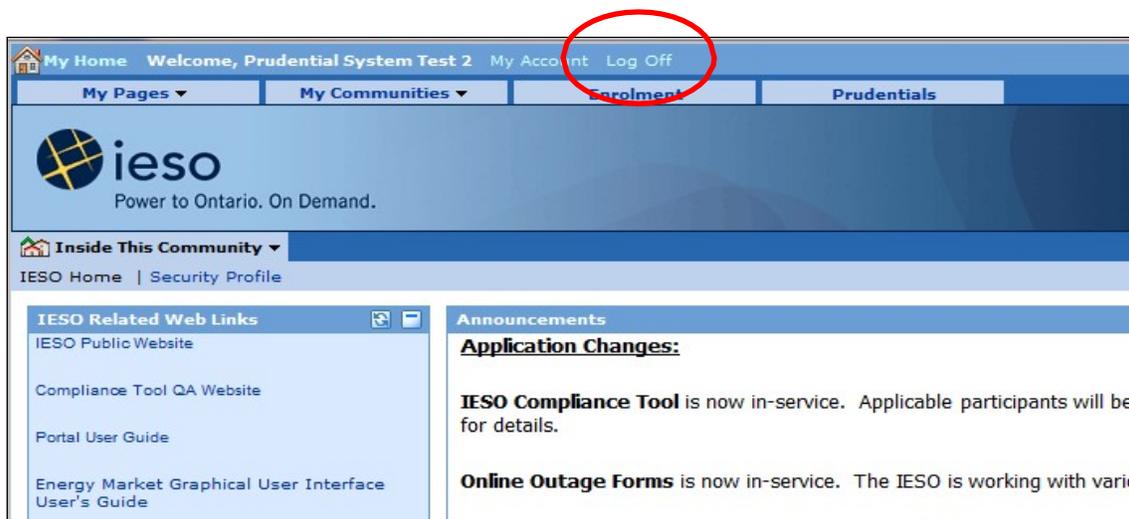
Save Cancel

Fill in each mandatory field (marked with a *). To submit the notification, click **Save**.

Remember that completing this step is separate from arranging the bank transfer to the IESO.

5. Log Off

To log off Prudential Manager, close all windows and additional browser tabs opened during the session. When these are all closed, click on **Log Off** to go to the Portal log off page.



Additional Information**Where can you find additional information about prudentials?**

If you need additional information about your prudential support or the IESO Portal, please refer to:

[*Market Rules Chapter 2: Participation*](#)

[*Market Manual 5.4: Prudential Support*](#)

Guide to the IESO Portal, available on the [Participant Tool Training](#) page

Prudentials Online: <http://www.ieso.ca/Online-IESO>

For more information or assistance, please contact IESO Customer Relations:

Telephone (905) 403-6900

Toll Free 1-888-448-7777

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