

Market Rule Amendment Proposal Form

Part 1 - Market Rule Information

Identification No.:	MR-00457-R00
Subject:	Market Renewal Program – Alignment Items
Title:	Market Renewal Program Interim Alignment - Market Manual and Batch Alignment Items
Nature of Proposal:	<input checked="" type="checkbox"/> Alteration <input checked="" type="checkbox"/> Deletion <input checked="" type="checkbox"/> Addition
Chapter:	Chapter 2 and Chapter 7
Appendix:	2.3
Sections:	Chapter 2, Sections 1.2, 3.1, 4.1, 4.2, 5.3, 5.6 Appendix 2.3, Section 1.7 Chapter 7, Sections 2.1, 2.2, 2.3, 22.15
Sub-sections proposed for amending:	Various
Current Market Rules Baseline:	September 2022

Part 2 - Proposal History

Version	Reason for Issuing	Version Date
1.0	Draft for Stakeholder Review	September 9, 2022
2.0	Draft following stakeholder feedback period	December 20, 2022
3.0	Draft for Technical Panel Review	February 7, 2023
4.0	Publish for stakeholder review and comment	February 22, 2023
5.0	Submitted for Technical Panel Provisional Vote	April 11, 2023

Approved Amendment Publication Date:

Approved Amendment Effective Date:

Part 3 Explanation for Proposed Amendment

The IESO proposes to amend the market rules to improve the clarity in Market Manual 1.5: Market Registration Procedures' coverage and its consistency with the market rules. In addition, other amendments are proposed to make appropriate references to new or modified defined terms, and correct typographical errors identified in previous Market Renewal Program (MRP) market rule amendment batches.

Key changes include:

- Simplifying the structure of Participant Authorization rules and merge common obligations;
- Italicizing defined terms;
- Correcting typographical errors and updating section references;
- Moving the obligation to complete the applicable registration procedures before the IESO authorizes participation in the IESO-administered markets from Market Manual 1.5 into the market rules;
- Changing the registration term 'maximum registered dispatchable load' to 'maximum load-active power'.

Background

Please refer to the MRP backgrounder in [MR-00450-R00](#).

Discussion

A number of amendments are proposed for sections 3 and 4 of Chapter 2 to enhance clarity and improve their alignment with Market Manual 1.5. Some redundancies were identified and eliminated through a restructuring of both sections 3 and 4 and movement of content between sections. This includes a restructuring of both sections 3 and 4, resulting in a movement of content from one section to another.

Other amendments are proposed that will correct typographical errors, and make proper references to defined terms. Some 'intentionally left blanks' have been removed where their removal does not significantly impact the numbering of subsequent sections.

The accompanying [Summary of Changes](#) document prepared for the Interim Alignment batch provides an explanation for each of the amendments proposed below.

Part 4 Proposed Amendment

Note: **Green font** is content that has been moved from another location in the section.

Chapter 2

1. Introduction

1.2 Participation

1.2.2.3 that the person ~~has agreed to be bound by these market rules by executing~~ executed the a participation agreement and filed same with the IESO;

3. ~~Application for~~ Authorization

3.1. Application for Authorization

3.1.1 A person who wishes to be authorized by the *IESO* to participate in the *IESO-administered markets* or to cause or permit electricity to be conveyed into, through or out of the *IESO-controlled grid* must file a completed *application for authorization to participate* in accordance with the applicable market manual.

3.1.2 The application for authorization to participate shall be accompanied by:

3.1.2.1 the non-refundable application fee established from time to time by the *IESO* to defray the costs of processing the application; and

3.1.2.2 unless the *application for authorization to participate* is submitted in respect of an applicant that is applying for authorization to participate in the *IESO-administered markets* solely as a one or a combination of (i) a *virtual trader*; (ii) a *TR participant*; or (iii) a *capacity auction participant*, either:

a. the federal harmonized value-added tax system registration number issued to the applicant by the Canada Customs and Revenue Agency; or

b. where the applicant is resident in Canada and is, by virtue of *applicable law*, not liable to pay the federal harmonized value-

added tax under Part IX of the *Excise Tax Act* (Canada), such documentation as may be prescribed in the *Excise Tax Act* (Canada) or described in the policies of the Canada Customs and Revenue Agency to support the exemption from such liability to pay.

3.1.3 The *IESO* shall, within ten *business days* of receiving an *application for authorization to participate* or within such longer period of time as may be agreed between the *IESO* and the applicant, advise the applicant of any further information or clarification which is required in support of its application if, in the *IESO's* opinion, the application is:

3.1.3.1 incomplete; or

3.1.3.2 contains information with respect to which the *IESO* requires clarification.

3.1.4 If the further information or clarification which is requested by the *IESO* pursuant to section 3.1.3 is not provided to the *IESO's* satisfaction within fifteen *business days* of the request or within such longer period of time as may be agreed between the *IESO* and the applicant, the applicant will be deemed to have withdrawn the *application for authorization to participate*.

3.1.85 —An applicant or *market participant* shall forthwith advise the *IESO* of any circumstances which result or are likely to result in a change in the information provided in the *application for authorization to participate* or in any updates thereto.

3.1.106 The *IESO* shall establish, maintain, update and *publish*:

3.1.6.1~~10.1~~ a list of all *market participants* and a list of all *applications for authorization to participate* filed with the *IESO*;

3.1.106.2 a list of all *market participants* that will cease to be *market participants* and the time that each listed *market participant* will cease to be a *market participant*;

3.1.106.3 a list of all *market participants* that are the subject of a *suspension order* or a *termination order* and the time at which the rights of each listed *market participant* was suspended or terminated; and

3.1.106.4 a list of all *market participants* that are the subject of an order referred to in section 6.5.1 of Chapter 3, and the time at which such order became effective in respect of each listed *market participant*.

4. Orders Authorizing Participation

4.1. Authorization Orders

~~3.1.54.1.1~~ The *IESO* shall, within twenty *business days* of receipt of the *application for authorization to participate* or of the further information or clarification requested

~~under section 3.1.3, whichever is the later, or within such longer period of time as may be agreed between the IESO and the applicant, The IESO shall by order authorize or may by order conditionally authorize the an applicant to participate in the IESO-administered markets or to cause or permit electricity to be conveyed into, through or out of the IESO-controlled grid, on such terms and conditions as the IESO considers appropriate, if:~~

~~4.1.1.1 for a conditional order, the IESO is satisfied that the applicant meets the requirements set out in section 1.2.2.2; or~~

~~3.1.5.14.1.2 for an order other than a conditional order, the IESO is satisfied that the applicant meets the requirements set out in section 1.2.2 applicable to the applicant.~~

~~3.1.5.2 the applicant has filed with the IESO an executed participant agreement, in such form as shall be established by the IESO, pursuant to which the applicant agrees to be bound by and comply with the market rules, provides the certification referred to in section 6.2.1 and certifies that it has adequate qualified employees or other personnel and organizational and other arrangements that are sufficient to enable the applicant to perform all of the functions and obligations applicable to market participants, the class of market participant of which the applicant forms part and the IESO-administered market in which the applicant wishes to participate.~~

~~4.1.2 The IESO shall issue an order made pursuant to section 4.1.1 in accordance with the following timelines:~~

~~4.1.2.1 within twenty business days of receipt of the applicant's application for authorization to participate or of the further information or clarification requested under section 3.1.3, whichever is the later; or~~

~~4.1.2.2 within such longer period of time as may be agreed between the IESO and the applicant.~~

~~4.2.14.1.3 A conditional n-order issued pursuant to section 4.1.1 that is conditional solely on the satisfaction of the requirements set out in section 1.2.2.1, section 1.2.2.4, or both, shall:~~

~~4.2.1.14.1.3.1 stipulate the date by which the applicant must satisfy the requirements of section 1.2.2.1, section 1.2.2.4 or both, as the case may be conditions; and;~~

~~4.2.1.34.1.3.2 lapse on the date referred to in section 4.2.1.14.1.3.1 if the applicant has not, prior to that date, received from the IESO notification that the applicant has fulfilled all conditions set out in the order. A lapsed~~

order shall be deemed to constitute an order denying the applicant authorization to participate in the *IESO-administered markets* or to cause or permit electricity to be conveyed into, through or out of the *IESO-controlled grid* as of the date it lapses.

4.1.4 The *IESO* may, at any time and in its sole discretion, amend a conditional order issued pursuant to section 4.1.1 to include an additional condition, to remove a condition, or to extend the date stipulated pursuant to section 4.1.3.1.

4.1.5 A person to whom a conditional order relates may request, in accordance with the applicable *market manual*, that the *IESO* extend the date stipulated pursuant to section 4.1.3.1 if a condition of the order cannot be met due to circumstances beyond the person's control or influence.

4.1.6 The *IESO* may terminate or suspend a conditional order issued pursuant to section 4.1.1 at any time if the *IESO* determines that:

4.1.6.1 there are material reliability or operational risks in maintaining the order;

4.1.6.2 the person to whom the order relates failed to address or complete a condition of the order; or

4.1.6.3 the person to whom the order relates fails to comply with the applicable *market rules*.

~~4.2.2.2 where such order lapses in accordance with section 4.2.1.3, be deemed to constitute an order denying the applicant authorization to participate in the *IESO-administered markets* or to cause or permit electricity to be conveyed into, through or out of the *IESO-controlled grid* as of the date referred to in section 4.2.1.3.~~

4.1.7 If an order issued pursuant to section 4.1.1 is terminated or suspended or lapses, the person to whom the order relates may submit a request to the *IESO* in accordance with the applicable *market manual* to extend or renew the order.

~~4.1.8 3.1.6~~ Subject to section 4.1.1, if the *IESO* is not satisfied that an applicant meets the requirements set out in section 1.2.2 the *IESO* shall, within twenty *business days* of receipt of the *application for authorization to participate* or of the further information or clarification requested under section 3.1.3, whichever is the later, or within such longer period of time as may be agreed between the *IESO* and the applicant, by order deny the applicant authorization to participate in the *IESO-administered markets* or to cause or permit electricity to be conveyed into, through or out of the *IESO-controlled grid*.

~~3.1.5A [Intentionally left blank—section deleted]~~

~~3.1.5B [Intentionally left blank—section deleted]~~

~~3.1.5B.1 [Intentionally left blank—section deleted]~~

~~3.1.5B.2 [Intentionally left blank section deleted]~~

~~3.1.5C [Intentionally left blank section deleted]~~

~~3.1.5C.1 [Intentionally left blank section deleted]~~

~~3.1.5C.2 [Intentionally left blank section deleted]~~

~~3.1.6 Subject to section 4.1.1, if the IESO is not satisfied that an applicant meets the requirements set out in section 1.2.2 the IESO shall, within twenty *business days* of receipt of the *application for authorization to participate* or of the further information or clarification requested under section 3.1.3, whichever is the later, or within such longer period of time as may be agreed between the IESO and the applicant, by order deny the applicant authorization to participate in the *IESO-administered markets* or to cause or permit electricity to be conveyed into, through or out of the *IESO-controlled grid*.~~

~~3.1.7 A person who wishes to dispute an order of the IESO made pursuant to section 3.1.5, 3.1.6, or 4.1.1 shall follow the dispute resolution procedures set forth in section 2 of Chapter 3.~~

~~3.1.8 An applicant or *market participant* shall forthwith advise the IESO of any circumstances which result or are likely to result in a change in the information provided in the *application for authorization to participate* or in any updates thereto.~~

~~3.1.9 [Intentionally left blank section deleted]~~

~~3.1.10 The IESO shall establish, maintain, update and *publish*:~~

~~3.1.10.1 a list of all market participants and a list of all applications for authorization to participate filed with the IESO;~~

~~3.1.10.2 a list of all market participants that will cease to be market participants and the time that each listed market participant will cease to be a market participant;~~

~~3.1.10.3 a list of all market participants that are the subject of a suspension order or a termination order and the time at which the rights of each listed market participant was suspended or terminated; and~~

~~3.1.10.4 a list of all market participants that are the subject of an order referred to in section 6.5.1 of Chapter 3, and the time at which such order became effective in respect of each listed market participant.~~

~~3A. [Intentionally left blank section deleted]~~

~~4. Conditional Authorization~~

~~4.1 — Conditional Authorization Order~~

~~4.1.1 — Within twenty business days of receipt of an application for authorization to participate or of the further information or clarification requested under section 3.1.3, whichever is the later, or within such longer period of time as may be agreed between the IESO and the applicant, the IESO may, if it is satisfied that the applicant meets the requirements set out in section 1.2.2.2, by order conditionally authorize the applicant to participate in the IESO-administered markets or to cause or permit electricity to be conveyed into, through or out of the IESO-controlled grid, on such terms and conditions as the IESO considers appropriate, until such time as the applicant has:~~

~~4.1.1.1 — satisfied the requirements set out in section 1.2.2.1, section 1.2.2.4 or both, as the case may be; and~~

~~4.1.1.1A — [Intentionally left blank — section deleted]~~

~~4.1.1.2 — filed an executed participation agreement, in such form as shall be established by the IESO, pursuant to which the applicant agrees to be bound by and comply with the market rules, provides the certification referred to in section 6.2.1 and certifies that it has adequate qualified employees or other personnel and organizational and other arrangements that are sufficient to enable the applicant to perform all of the functions and obligations applicable to market participants, the class of market participant of which the applicant forms part and the IESO-administered market in which the applicant wishes to participate.~~

~~4.1.2 — [Intentionally left blank — section deleted]~~

~~4.2 — Effect and Term of Order~~

~~4.2.1.2 — no longer be conditional at such time as the *IESO* notifies the applicant that:~~

~~a. — the applicant has met the requirements of section 1.2.2.1, section 1.2.2.4 or both, as the case may be; and~~

~~b. — the *IESO* has received from the applicant the executed *participation agreement* referred to in section 4.1.1.2; and~~

~~4.2.2 — An order issued pursuant to section 4.1.1 shall:~~

~~4.2.2.1 — where the *IESO* provides the notification referred to in section 4.2.1.2, be deemed to constitute the order authorizing the applicant to participate in the *IESO-administered markets* or to cause or permit electricity to be conveyed into, through or out of the *IESO-controlled grid*, on any other terms and conditions noted in the order issued pursuant to section 4.1.1, as of the date of receipt by the applicant of such notification; or~~

~~4.2.3 [Intentionally left blank section deleted]~~

~~4.2.3.1 [Intentionally left blank section deleted]~~

~~4.2.3.2 [Intentionally left blank section deleted]~~

~~4.2.3.3 [Intentionally left blank section deleted]~~

~~4.2.3.4 [Intentionally left blank section deleted]~~

~~4.2.4 [Intentionally left blank section deleted]~~

~~4.1.9 A conditional order shall be deemed to constitute the order authorizing the applicant to participate in the *IESO-administered markets* or to cause or permit electricity to be conveyed into, through or out of the *IESO-controlled grid* as of the date the applicant receives notification from the IESO that the applicant has fulfilled all the conditions of the order.~~

~~4.1.10¹ 4.2.5 A person to whom a *registered facility* is transferred as contemplated by section 2.5 of Chapter 7, shall be deemed to be a *market participant* as of the commencement of the first *trading day* following completion of the transfer and shall expeditiously pursue and complete the conditions precedent to becoming fully authorized as required by this Chapter.~~

~~3.1.74.1.11 A person who wishes to dispute an order of the *IESO* made pursuant to section 3.1.5, 3.1.6, or 4.1.1 or 4.1.8 shall follow the dispute resolution procedures set forth in section 2 of Chapter 3.~~

~~4.2.5 A person to whom a *registered facility* is transferred as contemplated by section 2.5 of Chapter 7, shall be deemed to be a *market participant* as of the commencement of the first *trading day* following completion of the transfer and shall expeditiously pursue and complete the conditions precedent to becoming fully authorized as required by this Chapter.~~

5.3 Calculation of Participant Trading Limit, Default Protection Amount and Maximum Net Exposure for Physical Transactions

Price Bases Used for Determining Minimum Trading Limit and Default Protection Amount

¹ Note concurrent amendment to section 4.2.5 in MR-00457-R03

5.3.10A When calculating the *minimum trading limit* and the *default protection amount* for *market participants* other than *energy traders* in sections 5.3.4, 5.3.8 and 5.3.8B respectively, the *IESO* shall establish and use as its price basis the following:

5.3.10A.1² for a *market participant* that is associated with a *generation resource, dispatchable load, or price responsive load*, the greater of (i) the hourly ~~locational marginal price~~ *locational marginal price* in the *day-ahead market* or (ii) the hourly average *locational marginal price* ~~locational marginal price~~ in the *real-time market*; or

5.6 Margin Call Requirements and the No Margin Call Option for Physical Transactions

5.6.1 A *market participant* that is not also a *virtual trader* must satisfy a *margin call* in respect of *physical transactions* within the time prescribed in section 5.6.2 by paying a portion of the amount payable or which will become payable in respect of the previous or current *energy market billing period*, in accordance with Chapter 9, in an amount sufficient to reduce the *market participant's actual exposure* to no more than the dollar equivalent of 75% of the *market participant's trading limit*. No interest shall be paid on such payments.

Appendix 2.3

1.7 Prudential Support by way of Cash or Treasury Bills

Where any portion of the *market participant's prudential support* for ~~physical transactions~~ *physical transactions* is in the form of treasury bills pursuant to section 5.7.2.3 of Chapter 2, the provision of such *prudential support* shall be reflected in a written instrument that is acceptable at the sole discretion of the *IESO* and the following provisions shall apply:

² Note concurrent amendment proposed in MR-00457-R02

Chapter 7

2.1 Requirements for Operating on the Grid

2.1.1 No person shall conduct *physical transactions* in the *day-ahead market* or in the *real-time markets* or cause or permit electricity or any *physical service* to be conveyed into, through or out of the *integrated power system* unless:

2.1.1.4 in accordance with ~~Appendix 7.8~~sections 22.1.3 and 22.6.3, that person has provided to the *IESO* all relevant materials the *IESO* may require to determine *reference levels* and *reference quantities* for that person's *resources* and the *IESO* has registered all applicable *reference levels* and *reference quantities* for that person's *resources*;

2.1.1.5 that person has disclosed ~~to the IESO~~, all of ~~their~~its *market control entities* ~~for each of its resources that is at the IESO~~;³

~~a. generation resource;~~

~~b. price responsive load; or~~

~~c. dispatchable load; and~~

2.1.1.6³ that person has designated ~~the a market control entity for physical withholding market control entity for physical withholding~~ in accordance with ~~Appendix 7.8~~ section 22.9 for each of its *resources* that is a *dispatchable generation resource* or a *dispatchable load*~~load~~; and

2.1.1.7 that person has completed all applicable processes to register its facilities and any associated resources set out in the applicable market manual.

2.2 ~~Facilities~~Facility and Associated Resources Registration

2.2.1 The *IESO* shall establish a process for registering a *facility* and any associated *resources* or for using a *boundary entity resource* and for registering a *market participant* as a *registered market participant*. Such process shall be set out in the applicable market manual and shall include, but not be limited to, the certifications referred to in sections 2.2.3.3 and 2.2.3.4 and the testing and inspection referred to in section 2.2.3.5.

³ Note concurrent amendment proposed for this section in MR-00457-R02

~~2.2.1A~~ ~~[Intentionally left blank—section deleted]~~

2.2.2 A ~~market participant~~ market participant may request to register a ~~facility~~ facility or any associated *resources* or to use a *boundary entity resource*:

2.2.2.1 for the delivery or withdrawal of specific *physical services* pursuant to the provisions of this section 2.2 ~~and, if applicable, section 21.2.-~~

~~2.2.2.2~~ ~~[Intentionally left blank—section deleted]~~

2.2.6 Where the *facility* sought to be registered is within the *IESO control area*, the information required for registration as a *facility* or as an associated *resource* as the case may be, shall, subject to any lesser requirements that may be *published* by the *IESO* in respect of the information required for registration of a given class or size of *facility* or any associated *resource*, include, but not be limited to:

2.2.6.8⁴ for a *resource* that will be subject to the *IESO's dispatch instructions*, certification that the *resource* has a minimum rated *generation capacity*, net of auxiliary requirements, or a minimum *dispatchable load capacity*, of 1 MW, or for an *electricity storage facility* an ability to inject a minimum of 1 MW and withdraw a minimum of 1 MW. Individual *generation units* or ~~sets of load equipments or units~~ may be aggregated to meet this minimum capacity requirement if they meet the aggregation requirements of section 2.3; and

2.2.6G In accordance with the applicable *market manuals*, a *registered market participant* that operates a ~~combined-cycle facility~~ combined cycle plant that is composed of generation resources that are not aggregated under section 2.3 shall submit to the *IESO*:

2.2.6G.1 the required data for each *resource* associated with that ~~combined-cycle facility~~ combined cycle plant, including the steam turbine *minimum loading point*; and

2.2.6G.2 if the *registered market participant* intends to designate any *resources* associated with its non-aggregated ~~combined-cycle facility~~ combined cycle plant as a *pseudo-unit* ~~in(i) the day-ahead market in accordance with section 3 of Chapter 7A; (ii) the pre-dispatch scheduling process in accordance with section 4A of Chapter 7; and (iii) the real-time market in~~

⁴ Note concurrent amendment to section 2.2.6.8 proposed in MR-00457-R02

~~accordance with section 4D of Chapter 7;~~ the required data for that *pseudo-unit* including the *steam turbine percentage share* and *duct firing 10-minute operating reserve capability*.

2.3 Aggregated Generation Units or Sets of Load Equipments as Resources⁵

- 2.3.1 A *market participant* may request to the *IESO* to aggregate several *resources* associated with either *generation units* or sets of load equipment, ~~loads~~ respectively for one or more of the following purposes (i) participating in the *day-ahead market*; or (ii) delivering or withdrawing one or more *physical services* in the *real-time market*, or the *procurement markets*. Upon *IESO* approval, the aggregated *resources* associated with either *generation units* or sets of load equipment ~~loads~~ shall, except as specifically stated in the registration information or the *IESO*'s approval of the aggregation, be treated as a single *resource*:
- 2.3.1.1 either for the provision or withdrawal of the approved *physical services* by the *registered market participant* for purposes of the submission of *dispatch data*; and
 - 2.3.1.2 by the *IESO*, for purposes of the scheduling and *dispatch* processes described in this Chapter ~~and for the purposes of scheduling processes of the day-ahead market described in Chapter 7A.~~
- 2.3.2 The *IESO* shall approve a request for the aggregation of *resources* associated with either *generation units* or sets of load equipments into a single *resource* unless:
- 2.3.2.1 the registration information for the *resources* associated with either *generation units* or sets of load equipments proposed to be aggregated fails to satisfy the conditions of section 2.2;
 - 2.3.2.2 the registration information fails to demonstrate one or more of the following in respect of the *resources* associated with either *generation units* or sets of load equipments proposed to be aggregated;
 - a. that they are all located within the *IESO control area*;
 - b. subject to section 2.3.2A, that they are all *connected* to the *IESO-controlled grid* at the same *connection point*;
 - c. that the *resource* is under the operational control of a single *market participant* and that such *market participant* is authorized to submit *dispatch data* for it;

⁵ Note concurrent amendment to section 2.3 proposed in MR-00457-R02

- d. that operational communication between each of them and the *IESO* meets all applicable standards and protocols; or
- e. that they all have relevant metering systems to be used for *settlements* purposes that satisfy the requirements of Chapter 6; or

2.3.2.3 one or more of the *resources* associated with *generation units, electricity storage units* or sets of ~~loads~~ load equipment proposed to be aggregated is or includes a resource:

2.3.2A Notwithstanding section 2.3.2.2b, the *IESO* may approve a request for the aggregation of *resources* associated with either *generation units* or sets of load equipments into a single *resource* that are not all *connected* to the *IESO-controlled grid* at the same *connection point*, provided that, in the sole judgement of the *IESO*, they can be represented as a single point of injection or withdrawal without compromising the *reliability* of the *IESO-controlled grid*. Aggregation for the purposes of calculating *transmission service charges* is specified in the then current *Ontario Energy Board Transmission Rate Order*.

22.15 Ex-Post Mitigation of Physical Withholding

Conditions – Operating Reserve

22.15.11 The *IESO* may test an *offer* for *operating reserve* of the *registered market participant* for a *resource* for *physical withholding* of *operating reserve* if the *resource*:

22.15.11.1 has a *day-ahead market* or a *real-time market locational marginal price* for *operating reserve* greater than \$5/MW and can supply at least 10 MW of *operating reserve* based on that *resource's* maximum resource active power capability and-or its maximum ~~registered dispatchable-load-~~ active power; or

22.15.11.2 has a *day-ahead market* or a *real-time market locational marginal price* for *operating reserve* greater than \$5/MW and the *market control entity for physical withholding* for the *resource* was designated as the *market control entity for physical withholding* for *resources* that can supply at least 10MW of *operating reserve* in aggregate based on those *resources'* maximum resource active power capabilities and-or its maximum ~~registered dispatchable-load-~~ active power,