

Respondent Name	Q1. Do you agree with the limitations outlined in the Dispatch Order for Baseload Generation discussion paper?	Response Type	IESO Response
Brookfield renewable Power Inc	It is our understanding that the IESO did take into account environmental and regulatory constraints to determine the proposed dispatch order. Being a hydro-electric producer, Brookfield fully appreciates the importance of such constraints and commends the IESO on that front.	Other	Thank you. The IESO has conducted an economic, regulatory, and environmental analysis which has been provided in an accompanying presentation.
Enbridge Inc.	There is an assumption made in the Discussion Paper that hydroelectric facilities can neither spill nor store it, which leads the authors of the Discussion paper to conclude that wind and solar generators should be dispatched first. While there may be restrictions on how hydro electric facilities, the Discussion Paper does not provide any background or references for such assumptions. This is problematic, given that these assumptions appear to serve as the basis for the IESO's conclusions with respect to wind and solar facilities.	Clarification	Thank you. The IESO has conducted an economic, regulatory, and environmental analysis which was provided at the January 24 presentation. Using coarse hydro electric spill and/or nuclear manoeuvres results in an over curtailment and thus requires replacement energy that results in higher cost and carbon emissions.
Enbridge Inc.	Overall, the Discussion Paper does not provide sufficient data or context for wind, solar, hydroelectric and nuclear generators to assess the effect of the proposed dispatch regime on their respective types of generation and inefficiencies this might place on market operations.	Other	Thank you.
Ontario Power Generation	In general this paper provides a fair and accurate reflection of the limitations to the dispatch capabilities of hydroelectric and nuclear generating facilities.	Other	Thank-you
Ontario Water Power Association	The paper provides a good overview of the practical limitations on the dispatch capabilities of waterpower facilities in Ontario and takes a reasoned and reasonable approach to the establishment of floor prices for wind and/or solar generation.	Other	Thank-you
Power Advisory LLC	Overall, the Discussion Paper requires additional analysis prior to reaching the conclusion of a relative dispatch order that dispatches nuclear generation and must-run hydroelectric generation ahead of variable generation therefore resulting in a framework that will economically curtail variable generation ahead of must-run hydroelectric generation and nuclear generation. Based on the limited analysis conveyed in the Discussion Paper, the proposed relative dispatch order appears to be arrived at prematurely.	Analysis	Thank you. The IESO has conducted an economic, regulatory, and environmental analysis which has been provided in an accompanying presentation. Using coarse hydro electric spill and/or nuclear manoeuvres results in an over curtailment and thus requires replacement energy that results in higher cost and carbon emissions.
Power Workers Union	The PWU generally agrees with the limitations that the IESO has identified.	Other	Thank-you
Power Workers Union	The IESO should also consider opportunities related to various types of generation. The IESO has indicated that under the proposed changes wind and solar will have new opportunities to earn incremental revenue. These factors should be considered in the assessment of Floor Prices.	Clarification	Consistent with Renewable Integration Design Principle 11, the IESO will look to include renewable resources into other aspects of the IESO administered markets. As an ongoing expectation, the IESO will consider the established floor prices as market conditions change.
Power Workers Union	The PWU notes that manoeuvring nuclear for SBG can have significant cost impacts, and maintenance and operational impacts. For nuclear a single large manoeuvre is preferred to multiple smaller manoeuvres.	Clarification	Thank-you for the additional clarity relating to nuclear operational impact. Although nuclear dispatch is out of scope of the Renewables Integration Initiative it should be noted that the IESO works with generation owners and will respect the technical limitations these resources owners identify.

Respondent Name	Q2. Are there limitations that were not identified in the Dispatch Order for Baseload Generation Discussion Paper?	Response Type	IESO Response
Brookfield renewable Power Inc	The contractual issues were intentionally put out of scope of the dispatch order determination. Since most of the generation in IESO is contracted, we are of the opinion that contractual constraints are an essential part of the analysis to determine the dispatch order and should therefore be part of the solution.	Contract	The IESO did consider contract implications and, specifically for the purpose of cost and environmental impact, assumed the "worst case" from a ratepayer perspective. This meant that all curtailed energy would be paid at the contract rate. Any other assumption would show that renewable curtailment with its current no pay contract structure (RES or FIT) would be less expensive. The IESO appreciates the challenges you have raised and will work with the OPA to coordinate rule and contract changes, provided it does not jeopardize the needs of the system operation. However, the negotiation and future contract design is out of scope for SE-91.
Bruce Power Marketing	Derating by condenser steam discharge valves are dependent on the length of time. The time limits depend upon reactor power and the amount of steam discharged through the valves.	Technical detail	Thank-you
Enbridge Inc.	The Discussion Paper places considerable emphasis on the dispatchability, equipment restrictions and regulatory issues facing hydroelectric and nuclear, and only briefly discussed a very small segment of the numerous issues identified by wind and solar generators in the stakeholder process. Enbridge does not deny that, with some exceptions, wind farms are able to reduce their output within 5-minute dispatch intervals. However, the flexibility of such generation should be rewarded rather than penalized, while being compensated for increased maintenance requirements and reduction in the operating life of components.	Technical detail	Thank-you. The IESO assumed that all curtailed energy would be paid at the current contract rate, and has not seen the need to pay more for the flexibility that is already built in to wind facilities.
Ontario Power Generation	The IESO proposes that the relative dispatch order for baseload generation should be wind and solar, hydroelectric, then nuclear. The ordering cannot be stated quite so simplistically. Hydroelectric resources can span a wide range of flexibilities and the operators of these facilities must maintain the ability to offer these resources in a merit order that will ensure efficient and safe operation. Imposing a floor price on hydroelectric resources would not be practical. Hydroelectric generators have sufficient economic drivers to ensure that their offers for these resources are economically rational.	Technical detail	Thank-you. The IESO acknowledges these characteristics and expects to develop an approach that will continue to ensure all resource types can offer in a manner that results in efficient and safe operation.
Ontario Water Power Association	The IESO is also accurate in referencing the restrictions imposed by water management plans pursuant to the LRIA and the multiplicity of social, economic and environmental values that can constitute the basis for such restrictions. It should be noted that non-compliance with a plan (e.g. water levels and flows) is subject to unique penalty provisions of the legislation. Section 28(2) (b) prescribes that a person is guilty of an offence if the person fails to comply with the approved water management plan. In addition to the standard fines and/or imprisonment penalty provisions, the Act provides that the fine may be increased by an amount equal to the monetary benefit that was acquired by non-compliance, removing any financial incentive to operate in a manner other than is prescribed in the plan.	Technical detail	Thank-you
Power Advisory LLC	In addition to the points regarding further analysis of forecast oversupply, transmission congestion, and generation curtailment, additional analysis is needed regarding the technical limitations of baseload generation identified in the Discussion Paper.	Clarification	The IESO believes that Ontario will experience periods of oversupply for the foreseeable future. The IESO expects to share additional information that was used to develop the discussion paper.
Power Workers Union	The Discussion Paper should note that solar and wind units are smaller increments of capacity per unit such that the IESO can more easily manage many SBG events using these smaller increments compared to the larger increments of capacity associated with nuclear facilities.	Technical detail	Thank-you
Robert Cary & Associates Inc	We note that even as recently as 3rd Dec, hydroelectric facilities on the Niagara and St Lawrence rivers have ramped up significantly in hours of negative prices. We find this puzzling, as we cannot see spillway management as a problem at those facilities. It is not clear from the IESO's discussion paper why floor prices for such generation should be below floor prices for wind or solar generation.	Clarification	As discussed at the Nov 21 Floor Price Focus Group session by both the IESO and a member of the stakeholder group, hydro electric facilities are required to meet various safety and regulatory obligations by operating and/or spilling as their obligations dictate. Where spill is unavailable, facilities are required to generate in order to meet these obligations. These obligations may present themselves at any time of day just as the wind may blow at anytime of the day. Safety and regulatory obligations will take precedence.

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Robert Cary & Associates Inc	In general, as noted by the IESO, wind facilities can be dispatched down to say 10% capacity and continue operating. Beyond that point wind facilities are likely to require to be stopped. This always introduces some risk of delay in restarting. This is particularly significant in certain seasons and ambient conditions, when restart of a facility can take several hours. Any floor provisions applicable to wind should therefore reflect the two steps, with the first (lowest) price increment set below floor prices for hydroelectric and for nuclear steam dump.	Technical detail	Thank you. The IESO will consider this factor during the development of mechanisms as part of the Floor Price Focus Group activities. The IESO will work with stakeholders to develop a process that acknowledges this particular point.
Robert Cary & Associates Inc	We note that nuclear curtailment can be implemented in any one of three ways: steam dump; reactor chemistry; and shutdown. The first two have part load capability only, but are recoverable without the 48 to 72 hour min shutdown period associated with any full unit shutdown. We would therefore expect that the capability represented by the first two steps would have a higher price floor than the unit shutdown.	Technical detail	Thank-you
Robert Cary & Associates Inc	We would also appreciate clarity assurance that the nuclear curtailment rules will be the same as the wind and solar curtailment rules, albeit with different floor prices.	Clarification	More information has been requested from respondent. However, the IESO would like to note that all dispatch obligations are subject to common rules and expectations, as well as to the compliance of those instructions.

Respondent Name	Q3. Are there other factors that should be considered when determining a dispatch order for baseload generation?	Response Type	IESO Response
Brookfield renewable Power Inc	A better approach would be one akin to the behaviour of a fully contracted vertically integrated utility. Under a surplus situation, such utility would look at the most efficient ways to limit their financial exposures by either increase demand through exports or reduce the output of its contracted generation fleet. It will use the least expensive measure for customers, given the contractual arrangements, to alleviate the surplus situation. In order to achieve an economic efficient solution, we think the IESO should first attempt to fully utilize the interties capacity available during SBG situation before it dispatched down generating units.	Out of Scope	Thank-you. The IESO agrees that interties can be an effective means to mitigate SBG, but these transactions must remain efficient. Through SE- 94 the IESO will study the effect of an export tariff during various conditions, including times of SBG. The IESO will continue to monitor the discussions of both stakeholder engagement processes and ensure consistency. For more information on SE-94, please visit http://www.ieso.ca/imoweb/consult/consult_se94.asp
Brookfield renewable Power Inc	Under this dispatch down process a unit specific floor price should be developed based on the cost of operation of each generating unit. The determination of these costs should incorporate safety, environmental, regulatory, facility mechanical and contractual constraints associated with each part of the IESO generation portfolio.	Other	Thank you. The IESO will consider this factor during the development of mechanisms part of the Floor Price Focus Group activities.
Brookfield renewable Power Inc	It appears that there will simply be one floor price for all nuclear generation regardless of the various technical capabilities of the different units across the province. Indeed it may be more economical, under certain conditions, to dispatch down 300MW of nuclear generation through operations of CSDs than dispatching down other types of generation.	Clarification	The IESO has not determined the structure of the floor price mechanism. This will be developed as part of the Floor Price Focus Group activity. However, the structure will be developed with considerations to overall cost effectiveness.
Enbridge Inc.	The Discussion Paper neglects to mention or place any weight on the significant positive contributions renewable energy makes to Ontarian's health and environment. These are tangible contributions that are supported by government policy and should be factored into the proposed dispatch regime.	Clarification	Thank-you. In implementing Principle 10, we are seeking to develop a dispatch order for baseload generation which will produce real-time dispatch outcomes that promote market efficiency, achieve cost-effectiveness, minimize environmental impacts, and achieve our strategic objective of effectively contributing to the development and implementation of government policy through our integration of variable generation into market and system operations.
Enbridge Inc.	The Discussion Paper appears to group wind and solar generators together, in the sense that both will be dispatched before hydroelectric and nuclear. However, while grouping wind and solar generators together, the IESO has not provided the capacity of potentially dispatchable wind generators. A large portion of solar generators are distribution connected and pursuant to the current dispatch process being proposed by the IESO, unless such generators are market participants, will not be subject to dispatch. Furthermore, based on the resource profile of solar facilities, which produce power during peak load conditions and are often located close to load, the effect of the dispatch regime will disproportionately and adversely affect wind generators.	Other	Thank-you. The IESO expects that there will be transmission connected solar facilities connected to the IESO-Controlled-Grid in the next 2 years, and they will be required to dispatch. Given the number and volume of transmission connected wind facilities, the IESO expects that wind generators will be required to dispatch at a greater frequency than solar.
Enbridge Inc.	Page 10 of the Discussion Paper outlines the effect of dispatch ability, equipment restrictions and public safety restrictions on wind farms. While Enbridge agrees that there is little risk to public safety in manoeuvring a wind farms output, the long term effects of dispatchability on a wind farms out, analogous to equipment restrictions, are unknown at this time. For example wind farms are rarely shut down completely and evaluation of wear and tear on brakes and hub components and the resultant performance based economic and service contracts are all tied to such "normal" operation. It is not possible to estimate the increased costs resulting from such incremental wear and tear and replacement costs at this time. The same can be also be said for solar facilities with respect to long term effects of significant curtailment. It is possible that panels will experience a reduction in both longevity and efficiency under these conditions.	Technical detail	Thank-you
Ontario Power Generation	In the white paper the IESO discusses operational needs for proactively dispatching wind and solar resources. It must be acknowledged that this type of operation requires the IESO to take out-of-market actions. The IESO has stated that market participants should have a full perspective and appreciation for the overall impacts stemming from the recommendations brought forth from SE-91. Therefore, rules, processes, and transparency issues associated with this type of operation should be addressed in this stakeholder engagement process.	Other	Thank-you

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Ontario Water Power Association	In addition, the provisions of regulation with respect to waterpower resource royalties and rentals bears mention. Under this framework (Gross Revenue Charge), waterpower facilities are taxed at a rate linked to the generation produced, even when prices fall below zero (0). In this regard, we agree with OPG's recommendation that any hydroelectric generator whose only alternative is to spill water should it be dispatched below its economic offers should be considered as baseload generation. Given the existence of water rentals, it is economically efficient for generators to offer available hydroelectric energy as a positive incremental cost and be prepared to spill water rather than operate at a loss.	Other	Thank-you
Power Advisory LLC	Other than IESO references made to their present 18-Month Outlook document provided at the November 21, 2011 Floor Price Focus Group, stakeholders require additional analysis regarding the following information: a. Forecast oversupply beyond the timeframe projected in the 18-Month Outlook b. Forecast of transmission constraints and congested generation on a zonal basis within and beyond the timeframe projected in the 18-Month Outlook c. Forecast curtailment of generation within zones where transmission constraints prevent energy from congested generation to be successfully injected onto the IESO-Controlled Grid (ICG) d. Overall power system costs associated with scheduling and dispatching all generation units under different oversupply scenarios, as stakeholders and market participants need to understand these estimated cost and applicable scenarios is in order to facilitate proper discussion around potential solutions	Out of Scope	Thank you. The IESO has conducted an economic and environmental analysis which will be provided in an accompanying presentation. Beyond the accompanying presentation, and specifically for the items identified within parts (a), (b) & (c), the IESO does not intend to forecast beyond its current publicly available products.
Power Advisory LLC	Even though the paper states that the IESO is "seeking to develop a dispatch order for baseload generation", the primary question should be whether distinct offer price floors for various baseload generators should be established at all, or why wind and solar generation (as opposed to nuclear generation or must-run hydroelectric generation) are in all cases the preferred alternative for priority economic curtailment.	Clarification	Thank you. This will be discussed during the development of mechanisms as part of the Floor Price Focus Group activities.
Power Advisory LLC	Generators should not be restricted by rules that restrict their offer prices by different and distinct price levels. No other North American jurisdiction with a similar wholesale electricity spot market provides for distinct offer price floors based on generator type differentiated by fuel.	Clarification	Ontario is the only jurisdiction with a two schedule system and the contract structures that incent non-marginal behaviour. As such, there has been no valid precedent to consider for adoption.
Power Advisory LLC	It is essential that the IESO first consider broader market design implications in terms of inadvertently creating inefficiencies in other areas (e.g., 'seams' issues regarding intertie transactions, etc.) if distinct offer price floors for baseload generation type are to be established. For example, consideration needs to be given to the design integration and dispatch coordination of supply resources that are 'locked-in' to produce and inject energy onto the ICG for an applicable real-time dispatch hour (e.g., self-scheduling generation facilities and import transactions) and whether the application of offer price floors and applicable dispatch instructions (both hourly and intra-hour) result in efficient scheduling and dispatch solutions for all generators and dispatchable loads to meet power system needs.	Clarification	Thank you. The IESO agrees and will ensure that all solutions will be measured against their impact to the market and its efficient and reliable operation.

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Power Advisory LLC	<p>The application of distinct offer price floors for baseload generation types should consider:</p> <p>a. When offer price floors will apply (e.g., always, during specific timeframes, etc.), therefore requiring clear definition of an SBG event and when Ontario's power system is experiencing an SBG event</p> <p>b. Dynamic application of SBG events in so far as different SBG events exist (e.g., short-term events lasting a few hours versus longer-term events lasting several weeks) potentially requiring specific solutions matched to different SBG events (e.g., matching outage coordination and maintenance schedules for sufficiently large baseload generation facilities and the feasibility of having scheduled shutdowns for these facilities in those periods where SBG events are projected to occur for prolonged periods of time)</p> <p>c. Any differences between global SBG events versus local SBG events and whether different offer price floors are needed for different areas of the ICG (even for the same baseload generation type)</p>	Clarification	<p>The IESO has conducted an economic and environmental analysis which is provided in an accompanying presentation. The Floor Price Focus Group effort is targeting the efficient operation of the ICG under all conditions, and it is not apparent how any variation in the application of floor prices for the various scenarios put forth would yield a more efficient result.</p> <p>The IESO also expects to provide further clarifications to what is defined as SBG (inline with OPA contracts). We believe this would benefit stakeholders as we begin to develop the frame work for floor prices.</p>
Power Workers Union	Prior to finalizing its recommendations for floor prices the IESO should consider and assess the potential impacts of the recommendations from the Market Forum currently underway. The Market Forum's draft recommendations include proposals to encourage dispatchable load. Should these proposed changes for dispatchable loads be approved, the IESO should plan to use this additional flexibility to mitigate the impacts of variable generation on SBG.	Out of Scope	The activities of the Market Forum and other market development initiatives will be monitored to ensure policy consistency. However, it is unlikely that the changes proposed for consumers would obviate the need for floor prices and renewable dispatch.
Power Workers Union	The IESO will need to deal effectively with local congestion in southern Ontario and flows into Michigan or Toronto. Loop flows could also be impacted.	Other	Thank-you
Power Workers Union	Market rules for exports and imports should be reassessed in the context of the dramatically increased variable generation capacity.	Out of Scope	Although out of scope for SE-91, the IESO is considering changes to intertie processes through SE- 94. The IESO will study the effect of an export tariff during various conditions, including times of SBG. The IESO will continue to monitor the discussions of both stakeholder engagement processes and ensure consistency. For more information on SE-94, please visit http://www.ieso.ca/imoweb/consult/consult_se94.asp
Power Workers Union	Floor prices should be reviewed and updated annually to reflect the most current marginal costs and changed circumstances. Stakeholders should be advised of revisions one month prior to implementation.	Other	Thank you. Over time, the IESO will continue to monitor and re-examine the impact of mechanisms established through SE-91 and the Floor Price Focus Group. The IESO will endeavour to do so in an open and transparent process.
Power Workers Union	The IESO should consider export tariff solutions to global oversupply. The IESO defines global oversupply as "when demand in Ontario is lower than the amount of baseload generation that is online and which wants to continue to run". Under global oversupply the Market Clearing Price is typically negative, meaning that all online generators are willing to pay in order to stay online for economic, equipment, regulatory or safety reasons. The IESO should continue to work to minimize the detrimental economic and operational impacts of SBG.	Out of Scope	Although out of scope for SE-91, the IESO is considering changes to intertie processes through SE- 94. The IESO will study the effect of an export tariff during various conditions, including times of SBG. The IESO will continue to monitor the discussions of both stakeholder engagement processes and ensure consistency. For more information on SE-94, please visit http://www.ieso.ca/imoweb/consult/consult_se94.asp
Robert Cary & Associates Inc	The floor price framework now being proposed is a complete departure from this fundamental principle of incentive framework rather than compulsion. The proposal introduces a level of restriction whereby market participants would be compelled to offer production in a way that (absent full OPA contract compensation for foregone energy revenues) would conflict with their proper economic interests. We do not consider that the fundamental nature of this change has been fully or properly considered to this point. We also believe that this fundamental change of principle can be avoided.	Contract	It should be noted that the IESO's preferred option is to have natural market incentives drive the behaviour of the participant when determining offer prices, and agrees with this fundamental point. However, Ontario operates a hybrid market which, given the incentives created by certain types of contracts, makes these changes necessary. The IESO will forward your contract concern to the OPA

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Robert Cary & Associates Inc	The floor price framework also introduces other changes to the operation of the market as a whole. We have not yet seen any analysis by the IESO of these impacts. A common floor price for a large quantity of generation will mostly preclude price excursions below that floor price. Unrestricted generators will be sheltered from the risk of such negative price excursions, so that their offer price strategies may become even less sensitive to SBG exposures.	Clarification	Thank you. The IESO has conducted an economic, regulatory, and environmental analysis which has been provided in an accompanying presentation. However, this will be discussed during the development of mechanisms as part of the Floor Price Focus Group activities.
Robert Cary & Associates Inc	The IESO has to date used non-market control actions such as the constraint down of Bruce unit production to address SBG situations. This is consistent with use of control actions to prevent imports into such surplus situations. If in the future the IESO will be relying on market dispatch with restricted offer prices to address SBG situations, will it still be in a position to use control actions to mitigate imports? Is there a potential that generators in other markets will be able to force Ontario imports, and thus force additional curtailment of Ontario wind resources, by offering to Ontario at prices lower than the known floor prices?	Out of Scope	The IESO will consider and evaluate all options on an ongoing basis. At this time we do not foresee the removal of this control action.

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Brookfield renewable Power Inc	Another important aspect that is not addressed in the white paper is the role played by exports in SBG period. Before dispatching down internal generation, the proposed design should incent an increase in demand through exports(s) to neighbouring systems. In order to reduce SBG, IESO should favour the access of external load to Ontario excess power. It would make no sense to curtail down internal generation when there is still room on interties that would inevitably reduce the SBG at limited costs. This would be achieved by reducing exports fees as it would become more economic than compensating internal generation to reduce their output during SBG situation.	Out of scope	It should be noted that the export tariff is not within the IESO's control but through SE- 94 the IESO will study the effect of an export tariff during various conditions, including times of SBG. The IESO will continue to monitor the discussions of both stakeholder engagement processes and ensure consistency. For more information on SE-94, please visit http://www.ieso.ca/imoweb/consult/consult_se94.asp
Brookfield renewable Power Inc	The benefits from reducing SBG are for all Ontarians. Therefore, the cost of dispatching down units that were designed and contracted to be non-dispatchable should be compensated through IESO uplifts charges like it is the case for CMSC payments.	Clarification	The IESO in its Renewable Integration Design Principles stated that CMSC would be paid consistent with the rules to all dispatched resources regardless of fuel type.
Brookfield renewable Power Inc	IESO should approach the reduction in SBG in a holistic fashion and clearly link this Stakeholder Engagement with Export Transmission Tariff study (SE-94).	Out of scope	The export tariff study is considering the impact of SBG. Although the IESO agrees that the export fee can have an impact it should be noted that it is unlikely that even with the complete elimination of the export fee the needs for renewable dispatch will change materially.
Enbridge Inc.	From a general perspective, although 10,700MW of targeted renewables for 2018 is identified in the Long Term Energy Plan (and referenced in the Discussion Paper), this capacity includes all renewable capacity in the province (current and existing). It is therefore somewhat misleading since not all of this renewable generation will be subject to dispatch measures under SE-91. Rather, the IESO should provide specifically the contribution of transmission connected projects that will be subject to dispatch under SE-91 in order to provide the proper context.	Clarification	Based on current OPA contract information, we estimate approximately 5,800 MW of wind and solar generation to be connected to the ICG by end of 2014.
Enbridge Inc.	The Discussion Paper states that the operations of non-utility generators (NUGs) are out of scope. It is not clear why NUG facilities (weather under existing or new contracts) should be excluded from the discussion and immune from any changes to dispatchability requirements.	Clarification	The NUG facilities are out of scope for this discussion. The IESO would like to note that the OPA currently has a process underway to review NUG contracts.
Enbridge Inc.	The C.D Howe Institute suggests a reward mechanism in their policy brief dated July 19, 2011, which mechanism is structured to provide overall benefit to the system. Without commenting on the Policy Brief as a whole, the reforms suggested are much more flexible and supportive of a true wholesale market than the somewhat blunt instrument being proposed by the IESO in the form of differentiated floor prices.	Clarification	The IESO has reviewed the concept of a dispatch down service and does not see that it would lead to a beneficial improvement to the floor prices design. It is the IESO conclusion that it may lead to higher costs to ratepayers in the long run.
Ontario Power Generation	OPG would like to see the IESO expand and clarify the definition of baseload generation. The IESO generally considers a hydroelectric facility to be baseload only if it must generate due to various regulatory or public safety concerns and is priced negatively. Any hydroelectric generator whose only alternative is to spill water should it be dispatched below its economic offers should be considered as baseload generation. Given the existence of water rental costs, it is economically efficient for generators to offer available hydroelectric energy as a positive incremental cost and be prepared to spill water rather than operate at a loss. Which facilities fall into this baseload category is highly situational and can change frequently based on seasonal, daily, or hourly local conditions. Consequently, the market price does not have to be negative to be experiencing surplus baseload generation conditions.	Technical detail	Thank you.
Ontario Power Generation	The IESO is currently undertaking a study of the Export Transmission Tariff as part of SE-94 and this presents an opportunity to decrease SBG and alleviate some of the challenges of dispatching baseload generation.	Out of scope	The export tariff study is considering the impact of SBG. Although the IESO agrees that the export fee can have an impact it should be noted that it is unlikely that even with the complete elimination of the export fee the needs for renewable dispatch will change materially. Through SE- 94 the IESO will study the effect of an export tariff during various conditions, including times of SBG. The IESO will continue to monitor the discussions of both stakeholder engagement processes and ensure consistency. For more information on SE-94, please visit http://www.ieso.ca/imoweb/consult/consult_se94.asp
Ontario Water Power Association	We also support the view that imposing a floor price on hydroelectric resources would not be practical. As OPG has correctly noted, hydroelectric resources can span a wide range of flexibilities and the operators of these facilities must maintain the ability to offer these resources in a merit order that will ensure efficient and safe operation.	Technical detail	Thank-you.

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Power Advisory LLC	In light of the IESO's SE-91 Renewable Integration Initiative, it is imperative to state that present ambiguity and lack of details regarding the direction of future amendments to the IESO Market Rules will frustrate the financing and development of these generation projects. Specifically, changes under consideration that will result in energy from wind and solar generation being curtailed and/or dispatched off more frequently than under the present framework in the Market Rules represent material differences in the Market Rules that could not have been contemplated at the time developers executed their procurement contracts with the OPA.	Contract	Thank-you. Your concern will be passed on to the OPA.
Power Advisory LLC	Further, and even more problematic, the OPA has not made any declarations at this point as to how applicable contracts will be amended in light of forthcoming changes to the Market Rules.	Contract	Thank-you. Your concern will be passed on to the OPA.
Power Advisory LLC	Final amendments to the Market Rules cannot be accepted by stakeholders and market participants until there is a full understanding of the OPA's position on applicable contract changes. Applicable amendments to the Market Rules go 'hand in glove' with applicable changes to OPA contracts. It does not make sense to decide one without an idea towards resolution on the other.	Contract	The IESO and OPA will endeavour to work together such that the timing for rules and contract changes go "hand in glove" provided it does not jeopardize the needs of the system operation.
Power Advisory LLC	Neither in any IESO documents or proposals, nor in the FIT contracts or supporting documents, is the term 'local oversupply' defined in sufficient detail to distinguish it from 'global oversupply'. Global oversupply has been loosely defined in the FIT contract with all other curtailment being ascribed to local oversupply.	Contract	Thank-you. The IESO will continue to provide information to the OPA as requested to further facilitate a definition for 'local SBG'. Your concern will be passed on to the OPA.
Power Advisory LLC	In order to understand the practices in other jurisdictions so as to help develop solutions for the Ontario's electricity market, the Consortium requests that the IESO provide stakeholders with research and analysis involving a benchmark from at least the U.S. jurisdictions regarding the integration of variable generation relating to scheduling, dispatching, and the compensation and application of offer/bid/price caps (both positive and negative) to applicable generators.	Clarification	This may be discussed during the development of mechanisms as part of the Floor Price Focus Group activities. However, Ontario is the only jurisdiction with a two schedule system and the contract structures that incent non-marginal behaviour. As such, there has been no valid precedent to consider for adoption.
Power Advisory LLC	Current Ontario Government policies ultimately support and encourage the development of variable generation. Therefore, any amendments to the Market Rules should not frustrate achievement of this Government policy. In order to ensure that these policy goals and objectives are met, the IESO and the OPA should reach out to key stakeholders in a timely manner, including those that typically do not participate in IESO consultation processes (e.g., lenders and financiers), in order to increase their understanding of the issues and derive workable solutions.	Contract	The IESO stakeholding process is an open forum for all concerned parties to participate in. In addition the IESO does actively seek out other opportunities to discuss the forthcoming changes with various stakeholders including those not typically engaged in IESO consultations. This concern will also be passed on to the OPA.
Power Advisory LLC	Given the Ontario Government's goals and objectives for the progressive and rapid uptake and development of renewable generation embodied in the Green Energy and Green Economy Act (2009) and the LTEP, applicable renewable generators who are working to meet these goals and objectives should not have to take on development and operational risks within the Market Rules or applicable OPA contracts that essentially result from the present oversupply and SBG in Ontario.	Contract	The IESO understand that the FIT contract itself was built with provisions for "present oversupply and SBG in Ontario" including the Additional Contract Payment provisions. The IESO continues to engage the OPA and other Government entities as we develop the mechanisms to integrate renewable resources.

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Power Advisory LLC	<p>the Consortium offers the following specific recommendations:</p> <p>a. Contract amendment discussions with the OPA and applicable variable generation developers/operators should begin immediately</p> <p>b. For stakeholders, market participants, and variable generators to properly assess impacts in the IAM, Market Rules, and OPA contracts, additional data/information is required regarding present and future oversupply scenarios/situations and any resulting dispatch instructions from the IESO resulting in curtailment orders to variable generators</p> <p>c. Consider alternate market mechanisms that can help address oversupply situations first prior to establishing distinct offer price floors for baseload generation types</p> <p>d. Additional supporting analysis that assesses unintended or inadvertent market design issues and consequences resulting from the application of any mechanism that may be used to address oversupply situations (including the application of distinct offer price floors for baseload generation types)</p> <p>e. If it is then determined that distinct offer price floors are required for baseload generation types, provide clear definition on what constitutes an oversupply situation and when offer price floors will be applicable</p> <p>f. Assess different applications of offer price floors or other mechanisms that may be more effective in addressing prolonged oversupply and SBG events</p>	<p>Part (a)-Contract</p> <p>Part (b)-Contract</p> <p>Part (c)-Clarification</p> <p>Parts (d), (e), (f)-Clarification</p>	<p>(Part a) - Your concern will be passed on to the OPA.</p> <p>(Part b) - The IESO is not intending to do any further analysis of the frequency and magnitude of dispatch for the reasons expressed previously articulated at the SE91 sessions. We will provide insight into the needs analysis already done.</p> <p>(Part c) - The IESO will present further detail and analysis on alternative options considered to a floor price, found in the accompanying presentation.</p> <p>(Parts d,e,f) - Will be considered as options gain definition.</p>
Power Workers Union	The IESO currently provides numerous forecasts as well as SBG forecasts. Combined with these existing forecasts and the new wind forecasting tools wind and solar generators will be better able to plan their maintenance schedules, factoring in the potential of SBG risk. Wind and solar should be required to monitor SBG forecasts and mitigate curtailment maintenance issues especially given the availability of the new IESO variable generation forecast system which the IESO expects to have operational in 2012.	Other	Thank you.
Power Workers Union	During stakeholder discussions the IESO stated that there will be circumstances under the new proposals where wind under local SBG can bid above \$0 and get more revenue than under other markets or under the current IESO process. This revenue potential should be factored into the IESO's assessment of the marginal costs for wind when setting the floor price for wind and the OPA should factor this into their revised wind prices for future contracts and if amending current contracts.	Clarification	Thank you for the comment. This will be considered as part of the floor price development process.
Power Workers Union	The IESO should reassess how imports are treated in the Ontario market in parallel with implementation of the IESO Floor Price recommendations. Currently imports are committed to on a planned basis and priced the day ahead. If wind picks up during actual dispatch, there could be SBG causing hydroelectric or nuclear to be dispatched-off.	Clarification	Imports are re-evaluated every hour and are curtailed if they are contributing to SBG.
Power Workers Union	The IESO and OPA should follow through on the Minister's directive and ensure that all renewed contracts for NUGs are designed to be more sensitive to prevailing IESO dispatch requirements.	Other	Thank you. This concern will be passed along to the OPA. The IESO would like to note that the OPA currently has a process underway to review NUG contracts.
Power Workers Union	The IESO should not finalize recommendations on floor prices until the OPA has completed contract discussions with the variable generators. Generators and stakeholders must be fully aware of tradeoffs and costs associated with the proposed dispatch rules, floor prices and OPA contract amendments.	Contract	Thank-you. The IESO appreciates the challenges you have raised and will work with the OPA to coordinate rule and contract changes, provided it does not jeopardize the needs of the system operation. Your concern will be passed on to
Power Workers Union	If the IESO decides that floor prices should be based on the generators' marginal cost stakeholders must be advised of what those marginal costs are and how such marginal costs have been determined.	Clarification	This may be discussed during the development of mechanisms as part of the Floor Price Focus Group activities.

Respondent Name	Q4. General Comments	Response Type	IESO Response
Power Workers Union	The IESO during stakeholder discussions indicated that the IESO and the OPA need to ensure clarity on the definition of local supply constraint (i.e. the OPA and generators need to confirm the definition of “a significant portion thereof”). This will be necessary to ensure that all stakeholders and operators understand when a local SBG event may occur and plan for such events.	Contract	Thank-you. The IESO will continue to provide information to the OPA as requested to further facilitate a definition for 'local SBG'. Your concern will be passed on to the OPA.
Robert Cary & Associates Inc	A contract structure that (i) provides full contract compensation for properly foregone energy production, and (ii) limits contract compensation to the difference between contract strike price plus EcoEnergy / WPPI benefit and non-negative HOEP, can achieve this without the need for market or contract restrictions on offer prices. Careful definition of the criteria for properly foregone energy production would incent offer behaviour close to zero, but with a degree of offer-price diversity according to each market participant’s evaluation of risks and rewards.	Part (i)-Contract Part (ii)-Further detail needed	(Part i) - Thank-you. Your concern will be passed on to the OPA. (Part ii) - It is unclear how this would work for regional oversupply that does not manifest in MCP. Also, there is a need to consider what issues would exist when dealing with the operational or ramp needs. The IESO detailed how such a mechanism would not work given the two schedule system in Ontario. The IESO believes that a floor price option is the only solution, unless an alternate methodology could be found.
Robert Cary & Associates Inc	The concept of a curtailment ancillary service has been raised by the RES group on a few occasions and by Dachis and Dewees. It would allow generators otherwise incented to run at maximum production to offer prices at which they would reduce production to some specified level. It could be modeled as a dispatchable pseudo-load at the generation connection point. IESO settlement would be conceptually similar to that in place for existing competitive ancillary services.	Clarification	The IESO has reviewed the concept of a dispatch down service and does not see that it would lead to a beneficial improvement to the floor prices design. It is the IESO conclusion that it may lead to higher costs to ratepayers in the long run.
Robert Cary & Associates Inc	In proposing alternatives to the floor price regime, it becomes even more clear that the optimum solution, from an electricity system perspective, requires joint consideration of contracts and rules. The OPA contracts for base load and variable generation all provide incentives that are in conflict with the IESO’s needs for renewable integration in the evolving supply mix as established by government in the years since the execution of RES I & RES II contracts. Solutions that emerge absent full and transparent OPA participation, and without joint and parallel consideration of contracts and rules have a high risk of being sub-optimal.	Contract	Thank-you. The IESO appreciates the challenges you have raised and will work with the OPA to coordinate rule and contract changes, provided it does not jeopardize the needs of the system operation. Your concern will be passed on to the OPA.
Robert Cary & Associates Inc	We have expressed our concern in the Dispatch Technical Working Group at the lack of information on expected frequency or depth of wind, solar, hydroelectric and nuclear curtailments under the proposed frameworks. It seems to us that meaningful estimates, with confidence bands, are essential to an understanding of the impacts on different technologies under varying floor price sequence scenarios, and that this is properly a matter for the Floor Price discussions. We urge the IESO to collate and present the best available information as a basis for decision making.	Clarification	The IESO has conducted an economic and environmental analysis which will be provided in an accompanying presentation. Using coarse hydro electric spill and/or nuclear manoeuvres results in an over curtailment and thus requires replacement energy that results in higher cost and carbon emissions.
Robert Cary & Associates Inc	We also seek some clarification of the quantum of market benefits expected from non-SBG curtailments. Absent some appreciation of the frequency and materiality of such events and their benefits, we find it hard to understand the basis for decision making in this area. We therefore look to the IESO to provide its best estimates of this information at the earliest opportunity.	Clarification	The IESO has conducted an economic and environmental analysis which will be provided in an accompanying presentation. Using coarse hydro electric spill and/or nuclear manoeuvres results in an over curtailment and thus requires replacement energy that results in higher cost and carbon emissions.

Respondent Name	Q4. General Comments	Response Type	IESO Response
Robert Cary & Associates Inc	<p>From a market perspective, we would be concerned that nuclear facility ramp rates could preclude or limit response in real time. We are unaware of circumstances when nuclear facilities have been expected to operate on the margin with real time dispatch response, yet this appears to be the IESO's plan. If nuclear facilities are unable to respond within their partial curtailment range, then the IESO may turn back to curtailment of the min load portion of wind, so we would be directly impacted. If on the other hand the IESO would propose some other time frame for the activation of nuclear curtailment, please advise how this would work and to what extent it could be made available to wind and solar generation. Day ahead and pre-dispatch commitments are available to most fossil generation and to imports and exports. Other dispatchable generation will continue to be able to manage its production, and to preclude marginal operation, by managing offer prices up to two hours ahead. Variable wind and solar generation will therefore face short term dispatch without the mitigation ability available to most other resources. We therefore propose that, subject always to the essential confirmation of the OPA that they would provide full contract compensation in such circumstances, there be a window for multi-hour curtailment based on pre-dispatch. Unfortunately the negative incentive for exports to participate in day ahead commitment seems to preclude use of the day ahead commitment process as a basis for block curtailment, so we would suggest use of the three-hour-ahead pre-dispatch as an appropriate basis for block (ie multi-hour) curtailment of nuclear, baseload hydroelectric, and dispatchable wind and solar generation.</p>	Further detail required	<p>Nuclear facilities like most other facilities respond to 5-minute dispatch from the IESO. However, like a Gas unit with an Minimum Loading Point, nuclear units when dispatched have in essence a minimum block reduction loading point that they must sit at to meet technical requirements of the technology.</p>