

# Proposed Actions to Address Counter-Intuitive Pricing

IESO Market Pricing Working Group  
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- **Events of April 7 have highlighted several pricing issues which although identified earlier, have not yet been adequately resolved.**
- **Credibility of IESO market pricing has been further eroded due to this event.**
- **The existing price situation and a proposed way forward to improve price behaviour is presented.**

- **Changes have been made since market opening to mitigate these issues:**
  - Control Action OR implemented
  - Spare Generation On-Line program created
- **Also, supply in Ontario has increased.**
- **All of these serve to reduce the chance that emergency control actions will be required.**
  
- **However, the underlying pricing issues continue to exist.**

- **IESO staff have looked at what can be done quickly and what should be done ultimately.**
- **Considered reducing/eliminating the price “drop” versus sending a specific price signal.**
- **What do others do?**
  - **NYISO – after-the-fact price determination based on assigning values to load reductions taken.**
  - **ISONE – “If you find a good solution please tell us.”**
  - **Both use (or will soon use) a demand curve to price OR shortages only.**

- **MSP has expressed concern about counter-intuitive pricing in each of its Monitoring Reports**
  - Eliminate counter intuitive price drops resulting from use of control actions
  - Reflect shortage conditions
- **MSP has noted that it is encouraged by the IESO's work to address this issue (e.g. internal pricing team, MPWG)**
  - ...but adds that further work is required
- **Areas highlighted by the MSP for further work include**
  - Further pricing of out-of-market control actions
  - “Incorporating emergency imports into the pricing algorithm in a more appropriate manner”.

- **Three possible options for early action have been considered:**
  - **Alter treatment of Emergency Energy purchases.**
  - **After event, administer prices using existing methodology.**
  - **After event, administer prices to predetermined fixed or floor values to reflect stressed system conditions.**

# Short Term Option 1 – Alter Current EE Treatment

- **Change tools such that EE purchases do not reduce the unconstrained demand.**
- **Unconstrained schedule would not benefit from EE and therefore price would not drop due to EE.**
- **No guarantee that price would rise to reflect stressed system conditions, but it may.**
- **Price may still drop due to other control actions taken.**
- **Impacts on price and possibly provides a signal of conditions in real-time.**
- **For April 7, this change would have eliminated the large price drop.**

## Short Term Option 2 – Expand Existing Admin Pricing

- **Whenever emergency actions are implemented by control room, prices would be reviewed.**
- **Existing rules on how administered prices are determined would apply, if decision is to administer.**
  - **Offers some flexibility in determining price (copy forward or backward).**
- **Ensures that price will not drop inappropriately for any emergency control action taken.**
- **Does not provide price or signal of conditions in real time.**
- **Relies on SSR to provide a real-time signal.**
- **For April 7, this would have eliminated the price drop.**

## Short Term Option 3 – Admin Prices to Fixed or Floor Value

- **Whenever emergency actions are implemented by control room, prices would be administered according to a predetermined table of actions and prices.**
- **Stressed system conditions will yield specific prices.**
- **May be difficult to reach consensus on the prices.**
- **Administered price may still drop during event, but will still be high.**
- **Does not provide price or signal of conditions in real time.**
- **Relies on SSR for a real time signal.**
- **For April 7, this change would have enabled price to be “set” to indicate the severity of the system conditions.**

- **Three options for a long term solution are under consideration:**
  - **Incorporate emergency control actions into the market price calculation such that prices more reflective of system conditions are determined.**
  - **Invoke real-time administrative prices (or price floors) when emergency conditions exist.**
  - **A combination of both.**

## Long Term Solution 1 – Incorporate Control Actions in Tools

- **As noted earlier, altered treatment of Emergency Energy purchases can be accomplished early on.**
- **Accurately incorporating other control actions such as voltage reduction or load shedding will be much more difficult.**
- **Resulting market price will not be lowered by control actions and may or may not reflect the severity of system conditions.**

- **Publish an administrative price real-time for predetermined conditions as illustrated below:**

<b>Emergency Actions Taken by CRO</b>	<b>Fixed or Floor Price</b>
Emergency Energy Purchase	1.0 * X \$
Implement 3% Voltage Reduction, and/or Disregard High Risk Limits, and/or NERC Energy Emergency Alert 2 Issued	1.5 * X \$
Implement 5% Voltage Reduction, and/or Operate to Emergency Condition Limits, and/or NERC Energy Emergency Alert 3 Issued	2.0 * X \$
Implement EDRP	3.0 * X \$
Implement Non-Dispatchable Load Cuts	\$2000

- **Provides market price signal that reflects the stressed system conditions at the time, thereby promoting response.**
- **May be difficult to reach consensus on the prices.**
- **Price floor will rarely be exceeded.**

- **Incorporate the control actions into the tools and have an administrative floor price for emergency control actions.**
- **Yields a higher price that may better reflect system conditions.**
- **Admin floor ensures that price is at least somewhat reflective of “real” system conditions at all times.**
- **Allows admin price solution in cases where control actions are not sufficiently incorporated into the tools.**

## 1: Incorporate all Emergency Control Actions “In Tools”

STAGE 1	STAGE 2	STAGE 3
Alter Current EE Treatment	Further Develop and Stakeholder Long Term Solutions	Incorporate all Emergency Control Actions “in-tools”

## 2: Real-Time Admin Fixed or Floor Prices

STAGE 1	STAGE 2	STAGE 3
Extend Existing Admin Pricing	Further Develop and Stakeholder Long Term Solutions	Real-Time Admin Fixed or Floor Prices

## 3: Combination of “In-tools” and Real-Time Admin Prices

STAGE 1	STAGE 2	STAGE 3
Alter Current EE Treatment	Further Develop and Stakeholder Long Term Solutions	Incorporate all Emergency Control Actions “in-tools”
Extend Existing Admin Pricing		Real-Time Admin Fixed or Floor Prices

- **Proceed in a Parallel, “Staged” Approach:**
  - Stage 1: Short-term partial solution.
  - Stage 2: Further development and stakeholdering of a long-term, comprehensive solution.
  - Stage 3: Implement the comprehensive, long-term solution.
- **Rationale:**
  - A long-term, comprehensive solution will take considerable time to implement.
  - Short-term, interim solution can address some of the significant issues until a long-term solution is agreed and implemented.

- **Proposal:**
  - Alter current EE treatment.
  - Continue with development and stakeholdering of a long-term and comprehensive solution.
- **Rationale:**
  - EE treatment change can be implemented relatively quickly.
  - EE proposal works in real-time – quick fix admin option doesn't
  - EE change would address the most frequent Emergency Control Action.
  - In parallel, MPWG has made progress on CAOR issue: this could also be implemented relatively quickly.
  - Together, these options will reduce some of the counter-intuitive prices during shortage and emergency conditions.

- **Proposal:**
  - Work through MPWG on a priority basis to determine preferred long-term solution.
- **Rationale:**
  - While a number of candidate long-term options have been explored, a full solution will require some additional analysis and appropriate stakeholdering.
  - Short-Term options will not solve everything:
    - Do not address price behaviour during voltage cuts and EDRP, and may not provide shortage signalling.
  - A long-term, comprehensive solution is desired.
  - Each of the long-term options have pros and cons.

## **Should Treatment of Emergency Sales be Altered?**

- **Recommendation has raised the question of whether current treatment of EE sales merits alteration, namely:**
  - **Should EE sales increase market demand (as it currently does)?**
  - **Or would it be more appropriate for market clearing price to be determined based on demand net of EE sales (and have additional cost to supply recovered in uplift charge)?**

- **In support of retaining the current emergency energy sales treatment it may be argued that increasing demand during EE sales is consistent with current marginal pricing philosophy (i.e. MCP is the incremental cost based on meeting all the demand in the system/market).**
- **An asymmetry between the treatment of emergency energy sales and purchases may be viewed as leading to inefficient outcomes and resulting in unnecessary costs to loads.**