

**Incentivized Day-Ahead Economic Load Curtailment Program
Summary of Proposal as Amended, Clarified and Approved by MC on 03/01/01**

(see pages 2 - 5 for specific detail; for any discrepancies, the accompanying detail prevails)

Issue	Proposal
1. Administration	Initially NYISO and host LSEs only; open to Curtailment Service Providers (CSPs) after one year. This is represented by the term "LSE/CSP" below.
2. Bidding	Load bids to curtail (a.k.a. "Generator Offset Bid") in contiguous time strips (minimum durations) in 1 MW minimum increments. Bid would include the Day-Ahead LBMP (Price-Cap) above which the load would not consume, and could also include a "Curtailment Initiation Cost".
3. SCUC Objective Function	Accepts Bids for curtailment that reduce Total Bid Production Cost (including consideration of paying the Price-Cap Bid and any bid "Curtailment Initiation Costs"). NYISO will include a portion, all or none of Day-Ahead curtailed Load in its Day-Ahead Load Forecast (scheduled for Capacity, not Energy) based upon experience/expectations for the penalty/reward system in place.
4. Setting LBMP	Can Set LBMP just as a comparably bid Generator; can not set LBMP if no Supply Bids exist to be displaced.
5. Customer Baseline Load	CBL determination similar to Emergency Demand Reduction Program.
6. Curtailment Determination	CBL minus Real-Time consumption.
7. Payments to Participants	NYISO pays LSE/CSP with curtailing End-Use higher of Price-Cap Curtail Bid or Day-Ahead LBMP. Payment will include "Uplift" supplement, if needed, for "Bid Curtailment Cost Guarantee" to allow full recovery of the "Curtailment Initiation Cost". Also, LSE/CSP with curtailing End-User is charged for full CBL at Day-Ahead LBMP; but then receives rebate from NYISO as "Incentive" (with exception noted in Item 11) for curtailed amount priced at Day-Ahead LBMP. LSE/CSP with Load selected for curtailment when no Supply Bids exist to be displaced will be paid its Bid including any necessary "Uplift" subject to the same price caps applied to Generators.
8. Payment Sharing	Total payments go to LSE/CSP with portion being transferred to End-User arranged between LSE/CSP and End-User. IOU Tos designate this portion to be shared in their retail tariffs, and apply them in a non-discriminatory manner. LIPA and NYPA agree to implement the intent of this requirement in a consistent manner.
9. Cost Allocation of Incentives and Uplift	"Incentive" and any "Uplift" payments cost allocated back to Loads on a Zonal basis in proportion to benefits received by each Zone (methodology to be determined; allocations may be based on off-line studies which result in "rule-of-thumb" values).
10. End-User Requirements	Interval metering; also responsible for incremental metering and billing costs.
11. Small Generator Eligibility	Open to a small "behind-the-fence" on-site generator (except diesels), provided generator has separate interval meter (and other applicable requirements are met). As in Item #7 above, LSE/CSP is paid Day-Ahead LBMP and any "Uplift" payments for Load curtailed through self-supply. However, to the extent that curtailed Load is self-supplied, LSE/CSP will not be eligible for the "Incentive" payment. Participating End-User with diesel needs separate metering on diesel to verify curtailment not self-supplied.
12. Non-Performance Penalties	LSE/CSP with End-User that fails Price-Cap curtailment which was eligible for "Incentive" pays 110% of higher of Day-Ahead or Real-Time LBMP. Excess applied to reduce costs allocated locationally to Loads for Price-Cap Curtail "Incentive" and "Uplift" payments. Bidder must specify whether Load Curtailment will result from: (a) actual reduction in consumption (eligible for "Incentive", and subject to the 110% Penalty); or (b) self-supplying Generator (not eligible for "Incentive", and not subject to the 110% Penalty; simply charged Real-Time LBMP for non-curtailed Load).
13. ICAP Eligibility	To be determined and developed by ICAP Working Group as part of Stage 2 or October 1, 2001 whichever is sooner.
14. Sunset Clause	"Incentivized" program expires 10/31/03 unless affirmatively extended by MC. Also, program will be re-evaluated every year for potential modifications and improvements.
15. Conversion to Economic Day-Ahead Program	If "Incentivized" program not extended past 10/31/03, program will convert to Economic Day-Ahead Load Curtailment Program with same rules except: (a) "Incentive" payment in Item #7 above will no longer be made by the NYISO; and (b) non-performance penalty in Item #12 will no longer apply. Therefore, LSE/CSP with End-User that curtails Load will continue to be paid the higher of the Price-Cap Curtail Load Bid or Day-Ahead LBMP, and payment will include supplemental "Uplift" payment, if needed.
16. Other Issues	(a) Need SCUC/Billing testing; (b) need MMU plan to protect against gaming and market flaws; (c) need coordination with any Price Circuit Breaker; (d) need PRLWG to develop "Non-Incentivized" Revenue Neutral Program for action by BIC by 02/28/02; and (e) MC restates and reinforces commitment to rapid implementation of Virtual Bidding by NYISO Staff no later than 10/31/01; (f) need more development to deal with economic Load curtailment bids when no additional supply bids exist; and (g) Tariff for this program will be reviewed by Chairs and Vice-Chairs of MC, BIC and OC, and by task force of PRLWG.

Incentivized Day-Ahead Economic Load Curtailment Program Proposal

as Amended, Clarified and Approved by
the NYISO Management Committee on 03/01/2001
(Motion #4: 61.38% affirmative vote)

The details of this program as summarized on the preceding table are as follows:

- 1) **Administration** - Initially, the program will be administered by the NYISO and host LSEs (i.e., "base load"/"full-requirements" LSEs) only; but will be open to Curtailment Service Providers (CSPs) including non-host LSEs after one year. Therefore, the term "LSE/CSP" used below refers to the host LSE for the first year of the program and to an LSE or CSP thereafter.
- 2) **Bidding** - The NYISO will implement a Zonal Price-Cap curtailable Load Bid (a.k.a. "Generator Offset Bid") program with the capability for an LSE (LSE or CSP in future) to bid on behalf of an End-User for a specific MW curtailment (in minimum increments of 1 MW by Zone) for a minimum duration (e.g., either in contiguous "strips" of one or more hours, or in pre-determined contiguous strips of time such as 4 hours, 8 hours, and/or 12 hours only). The Price-Cap Curtail Bid would include the Day-Ahead LBMP above which the Load would not consume, and could also include a "Curtailment Initiation Cost".
- 3) **SCUC Objective Function** - The objective function for SCUC will be to eliminate Price-Cap Curtail Load from Day-Ahead Bid Load when the total Bid Production Cost over the 24 hour Dispatch Day will be reduced compared to serving that Load (including consideration of paying the Price-Cap Curtail Bid and any bid "Curtailment Initiation Costs"). Thus, curtailments will not be scheduled unless they reduced total Day-Ahead production costs.

The NYISO will include a portion, all or none of Day-Ahead curtailed Load in its Day-Ahead Forecast Load above Bid Load (for which it will need to schedule Capacity, but not Energy) based upon its experience and expectations for the given penalty/reward system in place.

- 4) **Setting LBMP** - Curtailed Price-Cap Load can set Day-Ahead LBMP just as a comparably bid Generator.

In cases in which no Supply Bids exist to be displaced by curtailable Load -- and therefore no reduction in total Bid Production Cost can occur -- Day-Ahead Loads subsequently selected for curtailment will not set LBMP.

- 5) **Customer Baseline Load** - An End-User's Customer Baseline Load (CBL) will provide a reference to verify its compliance with a scheduled curtailment. The CBL will be determined using a method similar to that of the Emergency Demand Reduction program (i.e., something akin to using the rolling average of the End-User's Load for the previous ten days with certain qualifications).
- 6) **Curtailment Determination** - The amount of actual Real-Time curtailment determined for an End-User will be equal to its CBL less its actual Real-Time consumption during the specified curtailment.
- 7) **Payments** - An LSE/CSP with an End-User that curtails Load (as scheduled Day-Ahead by the NYISO) will be paid by the NYISO the **higher** of the Price-Cap Curtail Load Bid **or** Day-Ahead LBMP. This payment will include a supplemental "Uplift" payment, if needed, as a "Bid Curtailment Cost Guarantee" to allow full recovery of the "Curtailment Initiation Cost".

Additionally, an LSE/CSP with an End-User that curtails Load (as scheduled Day-Ahead by the NYISO) will be charged for its full CBL at Day-Ahead LBMP, but then will receive a rebate from the NYISO as an "Incentive" (with the exception specified in Item 11 below) for the curtailed amount of Load priced at Day-Ahead LBMP. Thus, through this "Incentive", they will avoid Day-Ahead Energy charges as a result of the End-User curtailment.

An LSE/CSP that has Load selected for curtailment for which no Supply Bids exist to be displaced, will be paid its Bid including any necessary "Uplift" subject to the same price caps applied to Generators.

- 8) **Payment Sharing** - The total payments ("Incentive" plus Day-Ahead LBMP plus any "Uplift") will be made to the LSE/CSP with the portion that will be transferred to the End-User to be arranged between the LSE/CSP and the End-User. Each Investor Owned Utility (IOU) Transmission Owner (i.e., excluding LIPA and NYPA) shall designate in its retail tariff the portion of the total payments that it will share with End-Users that curtail use under this program, and it will apply such portion in a non-discriminatory manner. LIPA and NYPA agree to implement the intent of the preceding sentence in a consistent manner.
- 9) **Cost Allocation of Incentives and Uplift** - "Incentive" and any "Uplift" payments made under this program will be cost allocated back to Loads on a Zonal basis in proportion to benefits received by each Zone (this methodology to be determined; and allocations may be based upon off-line studies which result in "rule-of-thumb" values).

- 10) **End-User Requirements** - End-Users will be required to have interval billing metering, and will be responsible for any incremental metering and billing system implementation and administration costs in accordance with applicable retail tariffs.
- 11) **Small Generator Eligibility** - The program will be open to a small "behind-the-fence" on-site generator (except diesel generators), provided the generator has a separate interval meter (and other applicable requirements are met). As in Item #7 above, the LSE/CSP in this case will be paid Day-Ahead LBMP and any "Uplift" payments for Load curtailed through self-supply. However, to the extent that an End-User's curtailed Load is self-supplied, its LSE/CSP will not be eligible for the "Incentive" payment (i.e., the LSE/CSP will be charged for the full Day-Ahead Load, and will **not** receive a rebate from the NYISO as an "Incentive" payment for the curtailed amount of Load that is self-supplied).

Participating End-Users with diesel generators must have separate interval meters on diesels to insure Load curtailment is not self-supplied via diesels.

- 12) **Non-Performance Penalties** - If an LSE/CSP has an End-User scheduled for a Price-Cap curtailment that would have been eligible for the "Incentive" payment, and that subsequently fails to curtail, the LSE/CSP will be charged 110% of the higher of Day-Ahead or Real-Time LBMP for non-curtailed Load. The premium paid over Real-Time LBMP will be applied to reduce costs allocated to Loads for Price-Cap Curtail "Incentive" and "Uplift" payments (on the same Zonal basis).

In this regard, a bidder must specify whether a Load Curtailment will result from: (a) an actual reduction in consumption (and therefore eligible for the "Incentive", but also subject to the 110% Performance Penalty); or (b) a self-supplying on-site Generator (and therefore not eligible for the "Incentive", and not subject to the 110% Performance Penalty, but simply charged Real-Time LBMP for non-curtailed Load).

- 13) **ICAP Eligibility** - Eligibility for program participants qualifying for ICAP and any associated rules will be determined and developed by the ICAP Working Group. This eligibility will be resolved as part of ICAP Stage 2 or October 1, 2001 whichever is sooner.
- 14) **Sunset Clause** - The "Incentivized" program will expire on October 31, 2003 unless the Management Committee affirmatively extends the program. Furthermore, the program will be re-evaluated every year for potential modifications and improvements.

15) **Conversion to Economic Day-Ahead Program** - If the "Incentivized" Program is not continued past October 31, 2003, it will convert at that time to an Economic Day-Ahead Load Curtailment Program retaining the same rules and features as the "Incentivized" Program with the exceptions that:

- a) The "Incentive" payment contained in Item #7 above will no longer be made by the NYISO.
- b) The non-performance penalty in Item #12 will no longer apply (i.e., Loads that fail to curtail will be charged Real-Time LBMP).

Thus, if the "Incentivized" Program is discontinued, an Economic Day-Ahead Load Curtailment Program will continue such that an LSE/CSP with an End-User that curtails Load (as scheduled Day-Ahead by the NYISO) will continue to be paid by the NYISO the **higher** of the Price-Cap Curtail Load Bid **or** Day-Ahead LBMP. As before this payment will include a supplemental "Uplift" payment, if needed, as a "Bid Curtailment Cost Guarantee" to allow full recovery of the "Curtailment Initiation Cost".

16) **Other Issues** -

- a) SCUC and Billing and Settlement need to be fully tested
- b) The Market Monitoring Unit needs to develop the necessary measures to ensure protection against gaming and market flaws
- c) The program needs to be coordinated with the implementation of any Price Circuit Breaker.
- d) The Management Committee directs that the Price Responsive Load Working Group (PRLWG) develop the concepts and specifications for a Day-Ahead Price Responsive "Non-Incentivized" Revenue Neutral Program for consideration by BIC by February 28, 2002.
- e) The Management Committee views Price Responsive Demand as essential to the creation of effective competitive markets in New York. It also views Virtual Bidding as essential to effective competitive markets, and therefore takes this opportunity to restate and reinforce its commitment to the rapid implementation of Virtual Bidding by the NYISO Staff by no later than October 31, 2001.
- f) Additional methodology will need to be developed to deal with the treatment of economic Load curtailment bids when no additional supply bids exist.

- g)** Tariff language applicable to this program will be reviewed by the Chairpersons and Vice-Chairpersons of the Management Committee, Business Issues Committee, and Operating Committee, and by a task force of the Price Responsive Load Working Group (PRLWG).

Incentivized Day-Ahead Economic Load Curtailment Program

Incentive, Uplift and Penalty Examples

Incentive vs. No Incentive Example

The proposal as approved by BIC really consists of two programs: (a) "Incentivized" economic curtailment of Load, and (b) economic selection of small generators for self-supply. They're treated very much the same, except in terms of payment received from the NYISO to the LSE/CSP...

1) Economic "Incentivized" Curtailment of Load - For Load scheduled to economically curtail Day-Ahead, that actually does curtail in Real-Time, the LSE would be paid the higher of its Price-Cap Curtail Bid **or** Day-Ahead LBMP which would include a supplement (**i.e., "Uplift" payment**), if needed, for "Bid Curtailment Cost Guarantee" to allow full recovery of the "Curtailment Initiation Cost". Also, the LSE would be charged for that curtailed Load, but then would receive a rebate for this charge **as the "Incentive"**.

As an example, assume:

- a) A 10 MW Load bids 7 MW fixed Load and bids to curtail 3 MW of Load at a Price Cap of \$100/Mwh plus \$2,000 for "Curtailment Initiation Costs" for a continuous time strip of 6 hours. This amounts to a total curtailment bid of \$3,800 = (3 MW x \$100/MWh x 6 hours) plus \$2,000.
- b) That Load is scheduled Day-Ahead for a 3 MW curtailment for 6 hours.
- c) Day-Ahead LBMP is \$250/MWh for those 6 hours.
- d) The Load actually consumes 7 MW and curtails 3 MW over those 6 hours.

The resulting payments and charges would be as follows...

- e) The LSE/CSP would be **paid** \$4,500 = \$250/MWh LBMP x 3 MW x 6 hours for the curtailment.
- f) No supplemental "Uplift" payment for a "Bid Curtailment Cost Guarantee" would be needed since the \$4,500 LBMP payment would exceed the \$3,800 total curtailment bid.
- g) The LSE/CSP would be **charged** \$15,000 = \$250/MWh LBMP x 7 MW x 6 hours for the fixed Load **plus** \$250/MWh LBMP x 3 MW x 6 hours for the curtailed Load.
- h) The LSE/CSP would then also receive a **rebate** of \$4,500 = \$250/MWh LBMP x 3 MW x 6 hours for the curtailed Load as an "Incentive".

2) Economic Selection of Small Generators for Self-Supply - For Load scheduled to economically curtail Day-Ahead, which continues to consume, but self-supplies the "curtailed" Load with a "behind-the-fence" small generator, the LSE would be paid the higher of its Price-Cap Curtail Bid **or** Day-Ahead LBMP for the self-supply which would include a supplemental "Uplift" payment, if needed, to allow full recovery of the "Curtailment Initiation Cost" (or "Start-Up and Min Gen Costs" in the case of a self-supplying small Generator). Also, the LSE would be charged for the full amount of Energy that the load consumes (i.e., no rebate would be paid for the "curtailed" Load as an "Incentive").

Consequently, a Load that "curtains" through self-supply would not be (and specifically is not intended to be) treated exactly the same way as a Load that "curtains" through an actual reduction in consumption. The self-supplied Load is not eligible for the "Incentive". However, this does provide a mechanism for small Generators to bid into the market without the more rigorous requirements of large Generators. For the **purposes of billing**, a Load and its "behind-the-fence" small Generator would be treated as two separate entities under this program.

As an example, assume:

- a) A 10 MW Load bids 7 MW of fixed Load and bids to curtail 3 MW of Load through self-supply via a "behind-the-fence" small generator at a Price Cap of \$100/MWh plus \$2,000 for "Curtailment Initiation Costs" (or "Start-up and Min Gen Costs") for a continuous time strip of 6 hours. This amounts to a total curtailment bid of $\$3,800 = (3 \text{ MW} \times \$100/\text{MWh} \times 6 \text{ hours})$ plus \$2,000.
- b) That load is scheduled Day-Ahead for a 3 MW curtailment for 6 hours.
- c) Day-Ahead LBMP is \$250/MWh for those 6 hours.
- d) The Load actually consumes 10 MW, but self-supplies 3 MW of that 10 MW over those 6 hours (i.e., it has a net consumption of 7 MW).

The resulting charges and payments would be as follows...

- e) The LSE/CSP would be **paid** $\$4,500 = \$250/\text{MWh LBMP} \times 3 \text{ MW} \times 6 \text{ hours}$ for the self-supplied "curtailed" Load.
- f) No supplemental "Uplift" payment for a "Bid Production Cost Guarantee" would be needed since the \$4,500 LBMP payment would exceed the \$3,800 total curtailment bid.
- g) The LSE/CSP would be **charged** $\$15,000 = \$250/\text{MWh LBMP} \times 10 \text{ MW} \times 6 \text{ hours}$ for its total consumption even though a portion is self-supplied.
- h) The LSE/CSP would not receive a **rebate** for the curtailed Load (i.e., no "Incentive" payment would be paid for the 3 MW of self-supplied "curtailed" Load).

The difference, obviously, between "#1" and "#2" above is that under "#1", the LSE would be charged \$4,500 less for Energy -- i.e., the "Incentive".

Uplift Example

An LSE will be paid the higher of its Price-Cap Curtail Bid **or** Day-Ahead LBMP for the self-supply which would include a supplement (**i.e., "Uplift" payment**), if needed, for "Bid Curtailment Cost Guarantee" to allow full recovery of the "Curtailment Initiation Cost" (in the case of a small self-supplying generator, this would be identical to a "Bid Production Cost Guarantee" to allow full recovery of start-up and min gen costs).

Assume the same example for a curtailable Load Bid above (with and without the self-supplying small generator) except that the Load bids a Price-Cap of \$150/MWh rather than \$100/MWh, and continues to bid \$2,000 for "Curtailment Initiation Costs". This amounts to a total curtailment bid of \$4,700 = (3 MW x \$150/MWh x 6 hours) plus \$2,000.

For a Load without a self-supplying generator, the payments and charges would be as follows:

- a) As in the previous example, the LSE/CSP would be **paid** \$4,500 = \$250/MWh LBMP x 3 MW x 6 hours for the curtailment.
- b) The LSE/CSP would also be paid \$200 = \$4,700 - \$4,500 as a supplemental **"Uplift"** payment for a "Bid Curtailment Cost Guarantee" since the total \$4,700 curtailment bid exceeded the \$4,500 LBMP payment (this is based upon the requirement that SCUC determines that the total bid production cost over the 24 hour Dispatch Day will be lower with this Load curtailed).
- c) Also, as in the previous example, the LSE/CSP would be **charged** \$15,000 for the fixed Load plus the curtailed Load; and then would also receive a **rebate** of \$4,500 as an "Incentive".

The same example holds for Load that curtails through self-supply except that the "Incentive" rebate payment is not made.

This example is simplified somewhat because the bids and LBMPs in each hour were the same, but the principle remains that "Uplift" is paid if, over the course of the 24 hour Dispatch Day, bid costs are not fully recovered through LBMP.

Penalty Example

If an LSE/CSP has an End-User scheduled for a Price-Cap curtailment that would have been eligible for the "Incentive" payment, and that subsequently fails to curtail, the LSE/CSP will be charged 110% of the higher of Day-Ahead or Real-Time LBMP for non-curtailed Load. A self-supplying on-site Generator is not eligible for the "Incentive", and also not subject to the 110% Performance Penalty; it is simply charged Real-Time LBMP for non-curtailed Load.

1) Economic "Incentivized" Curtailment of Load With Non-Performance Penalty for Failure to Reduce Consumption

As an example, assume:

- a) A 10 MW Load bids 7 MW fixed Load and bids to curtail 3 MW of Load by reducing consumption at a Price Cap of \$100/MWh plus \$2,000 for "Curtailment Initiation Costs" for a continuous time strip of 6 hours. This amounts to a total curtailment bid of \$3,800 = (3 MW x \$100/MWh x 6 hours) plus \$2,000.
- b) That Load is scheduled Day-Ahead for a 3 MW curtailment for 6 hours.
- c) For those six hours, Day-Ahead LBMP is \$250/MWh, and Real-Time LBMP is \$300/MWh.
- d) Over those six hours, the Load actually consumes 10 MW; it fails to curtail 3 MW.

The resulting payments and charges would be as follows...

- e) The LSE/CSP is **not paid** for the curtailment since it didn't occur.
- f) The LSE/CSP would be **charged** \$10,500 = \$250/MWh Day-Ahead LBMP x 7 MW x 6 hours for the fixed Load.
- g) The LSE/CSP would also be **charged** \$5,940 = 110% x \$300/MWh Real-Time LBMP x 3 MW x 6 hours for the Load that failed to curtail.
- h) The LSE/CSP also would not receive a **rebate** as an "Incentive" because it failed to curtail.

2) Self-Supply Curtailment of Load With Non-Performance Penalty for Failure to Curtail

As an example, assume:

- a) A 10 MW Load bids 7 MW fixed Load and bids to curtail 3 MW of Load through self-supply at a Price Cap of \$100/MWh plus \$2,000 for "Start-Up and Min Gen Costs" for a continuous time strip of 6 hours. This amounts to a total curtailment bid of \$3,800 = (3 MW x \$100/MWh x 6 hours) plus \$2,000.
- b) That Load is scheduled Day-Ahead for a 3 MW curtailment for 6 hours.
- c) For those six hours, Day-Ahead LBMP is \$250/MWh, and Real-Time LBMP is \$300/MWh.
- d) Over those six hours, the Load actually consumes 10 MW; it fails to self-supply 3 MW, and therefore fails to curtail.

The resulting payments and charges would be as follows...

- e) The LSE/CSP is **not paid** for the curtailment since it didn't occur.
- f) The LSE/CSP would be **charged** \$10,500 = \$250/MWh Day-Ahead LBMP x 7 MW x 6 hours for the fixed Load.
- g) The LSE/CSP would also be **charged** \$5,400 = \$300/MWh Real-Time LBMP x 3 MW x 6 hours for the Load that failed to curtail (it is not subject to the 110% penalty since it bid to curtail through self-supply).
- h) The LSE/CSP was not eligible for a **rebate** as an "Incentive" because it bid to self-supply rather than actually reduce consumption.