

# Cost Allocation Example of Regulated Reliability Solution for a LICAP Deficiency with Assignment of Benefits

## Introduction

The following presents an example of cost allocation associated with a regulated reliability solution (under the NYISO's Comprehensive Reliability Planning Process) including assignment of benefits that may accrue from those solutions.

### **Base Case CRPP Assumptions – Need Identified – But Not Yet Met (See Table 1):**

1. Results are presented in terms of the last year of a ten year planning horizon.
2. Sub-Zone X in the CRPP base case has a total ICAP requirement of 12,000 MW.
3. Based upon an available import tie limit of 4,000 MW, Sub-Zone X has a Total LICAP requirement of 8,000 MW. LICAP requirements can be met by LICAP or UDRs coupled with ICAP from outside Sub-Zone X.
4. Sub-Zone X is found to have 7,500 MW of available LICAP representing a deficiency of 500 MW; i.e., a CRPP “reliability need”.
5. LSE A and LSE B comprise all the load in Sub-Zone X on a load ratio share of coincident peak loads amounting to 25% and 75% respectively. Therefore LSE A will be assigned 25% of costs for a regulated solution as well as 25% of benefits that accrue in the form of expansion TCCs and UDRs (for a regulated transmission solution) costs, or incremental LICAP (for a supply or demand-side regulated solution). Likewise, LSE B will be assigned 75% of costs and benefits.
6. LSE A's LICAP requirement is 2,000 MW, for which it holds pre-existing long term capacity contracts for that same amount.
7. LSE B has no long term capacity contracts.

<b>Table 1: Base Case CRPP</b>				
Year Y+10 (Last Year in Planning Horizon)				
Ln #		LSE A	LSE B	Sub-Zone X
1	ICAP Requirements	3,000	9,000	12,000
2	Available Sub-Zone's Import Tie Limit	--	--	4,000
3	LICAP Requirements	2,000	6,000	8,000
4	Available LICAP	--	--	7,500
5	Available LICAP Surplus (Deficiency = Need)	--	--	(500)
6	Pre-Existing Long Term ICAP Contracts	3,000	0	--
7	Pre-Existing Long Term LICAP Contracts	2,000	0	--

## **Cost Allocation Assumptions for a Regulated LICAP Solution (See Table 2)**

1. Sub-Zone X is allocated 100% of a \$100 million regulated reliability solution to correct the LICAP deficiency by adding LICAP to Sub-Zone X.
2. LSE A is allocated 25% of the total cost (\$25 million) and LSE B is allocated 75% (\$75 million). Essentially, LSE A pays for and is assigned 125 MW of increased LICAP and LSE B pays for and is assigned 375 MW of increased LICAP<sup>1</sup>.
3. LSE A does not need the 125 MW of additional LICAP that it is assigned; therefore it can sell that amount. This assignment of benefits can serve to reduce LSE A's net cost for the regulated reliability solution.
4. To fulfill its 6,000 MW LICAP requirement, LSE B needs to purchase 5,500 MW of previously available LICAP for sale, needs the 375 MW of additional LICAP that it is assigned, and also needs to purchase the 125 MW of new LICAP that was assigned to LSE A. Thus, this allows Sub-Zone X as a whole, and LSE B in particular to meet LICAP requirements.
5. The \$100 million regulated LICAP solution amounts to \$2 million per MW of LICAP. To the extent that the LICAP sells on auction at a comparable amount, the cost allocation to LSE A for the reliability solution would be totally offset.
6. Note: Any potential reductions in overall ICAP IRM requirements that may result from the additional LICAP are ignored.

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<sup>1</sup> For simplicity, the cost of the regulated solution is stated as a lump sum. In actuality, each LSE would be allocated a portion of the annualized cost of a regulated reliability upgrade based upon its load ratio share in each particular year.

**Table 2: CRPP Case w Regulated LICAP Solution Added**  
**Cost of Regulated Solution = \$100 million**

Year Y+10 (Last Year in Planning Horizon)

Ln #		LSE A	LSE B	Sub-Zone X
1	ICAP Requirements	3,000	9,000	12,000
2	Initially Available Sub-Zone's Import Tie Limit	--	--	4,000
3	LICAP Requirements	2,000	6,000	8,000
4	Available LICAP	--	--	7,500
5	Available LICAP Surplus (Deficiency = Need)	--	--	(500)
6	Load Ratio Share of Coincident Peak Loads	25%	75%	100%
7	Pre-Existing Long Term LICAP Contracts	2,000	0	2,000
8	Net LICAP Needed	0	6,000	6,000
9	Old LICAP Available for Sale	--	--	5,500
10	New LICAP Purchased for Regulated Solution	--	--	500
11	New LICAP Assigned from Regulated Solution	125	375	500
12	Excess LICAP Available for Sale	125	--	125
13	Old and New LICAP Purchased	--	5,625	5,625
14	Total LICAP Ultimately Held (Equal to Needs)	2,000	6,000	8,000
15	Cost Allocation of Regulated Solution	\$25 m	\$75 m	\$100 m
16	Less Revenue from Sale of LICAP	(-\$) x 125 MW	--	
17	Plus Expense from Purchase of LICAP	--	(+\$) x 125 MW	

### **Cost Allocation Assumptions for a Regulated Transmission Solution (Table 3)**

1. Sub-Zone X is allocated 100% of a \$100 million regulated reliability transmission solution to increase import capability by 500 MW to correct the LICAP deficiency.
2. LSE A is allocated 25% of the total cost (\$25 million) and LSE B is allocated 75% (\$75 million). Essentially, LSE A pays for 125 MW of increased import capability and LSE B pays for 375 MW of increased import capability<sup>2</sup>.
3. The solution will generate 500 MW in expansion TCCs and 500 MW in expansion UDRs, of which LSE A is assigned 125 MW of each and LSE B is assigned 375 MW of each. The UDRs provide ICAP import rights from outside Sub-Zone X into Sub-Zone X so that that imported ICAP can be considered equivalent to LICAP within the Sub-Zone.<sup>3</sup>
4. LSE A does not need the 125 MW of expansion UDRs that it is assigned; therefore it can sell those (or 125 MW of its LICAP that it has) at auction. Additionally, LSE A can sell the 125 MW of expansion TCCs it is assigned, or can retain the TCCs and receive the associated congestion rent. These assignments of benefits can serve to reduce LSE A's net cost for the transmission solution.
5. To fulfill its 6,000 MW LICAP requirement, LSE B needs to purchase 5,500 MW of previously available LICAP available for sale, needs the 375 MW of expansion UDRs that it is assigned, and also needs to purchase the 125 MW of UDRs that were assigned to LSE A (additionally, it needs to procure ICAP from outside Sub-Zone X coupled with those UDRs). Furthermore, LSE B can sell the 375 MW of expansion TCCs it is assigned, or can retain the TCCs and receive the associated congestion rent. These assignments of benefits allow LSE B to meet its LICAP requirements and can serve to reduce LSE B's net cost for the regulated reliability solution.
6. The \$100 million regulated LICAP solution amounts to \$2 million per MW combined for both TCCs and UDRs. To the extent that the TCCs and UDRs sell on auction at a comparable combined amount (or if held, that the TCCs generate a comparable amount of congestion rent), the cost allocation to LSE A for the reliability solution would be totally offset.
7. Note: Any potential reductions in congestion costs that may result from the project are ignored; and any potential reductions in overall ICAP IRM requirements that may result are also ignored.

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<sup>2</sup> For simplicity, the cost of the regulated solution is stated as a lump sum. In actuality, each LSE would be allocated a portion of the annualized cost of a regulated reliability upgrade based upon its load ratio share in each particular year.

<sup>3</sup> For the purposes of this example, a one-to-one relationship is assumed to exist between required LICAP and the import limit (i.e., a 1 MW increase in the import limit results in a 1 MW decrease in the LICAP requirement). In actuality, this is not necessarily the case, and that relationship is in fact dependent upon a number of variables.

**Table 3: CRPP Case w Regulated Transmission Solution Added****Cost of Regulated Solution = \$100 million**

Year Y+10 (Last Year in Planning Horizon)

Ln #		LSE A	LSE B	Sub-Zone X
1	ICAP Requirements	3,000	9,000	12,000
2	Initially Available Sub-Zone's Import Tie Limit	--	--	4,000
3	LICAP Requirements	2,000	6,000	8,000
4	Available LICAP	--	--	7,500
5	Available LICAP Surplus (Deficiency = Need)	--	--	(500)
6	Load Ratio Share of Coincident Peak Loads	25%	75%	100%
7	Pre-Existing Long Term LICAP Contracts	2,000	0	2,000
8	Net LICAP or UDR/ICAP Needed	0	6,000	6,000
9	Old LICAP Available for Sale	--	--	5,500
10	New UDRs Provided by Regulated Solution	--	--	500
11	New UDRs Assigned from Regulated Solution	125	375	500
12	Additional LICAP or UDRs Available for Sale	125	--	125
13	LICAP and/or UDRs* Purchased	--	5,625	5,625
14	Total LICAP and/or UDRs* Ultimately Held	2,000	6,000	8,000
15	Incremental TCCs from Regulated Solution	125	375	500
16	Cost Allocation of Regulated Solution	\$25 m	\$75 m	\$100 m
17	Less Revenue from Sale of UDRs	(-\$) x 125 MW	--	
18	Plus Expense from Purchase of UDRs	--	(+\$) x 125 MW	
19	Less Rev. from Sale of TCCs or Congestion Rent	(-\$) x 125 MW	(-\$) x 375 MW	

\* UDR purchase assumes concurrent ICAP purchase as well to satisfy full ICAP/LICAP requirements.