# EB-2019-0242

# Association of Major Power Consumers of Ontario ("AMPCO")

# Kingston CoGen Limited Partnership ("KCLP")

**Compendium for Argument** 

December 12, 2019

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	November 21, 2019

# TAB 1

# DIAGRAM FOR ORAL ARGUMENT

## Scenario 1 – Pre-Transitional Capacity Auction

Different Bidding Strategies in IESO Administered Markets

	Off-Contract Dispatchable Generation	Demand Response	
Cost Categories		Hourly Demand Response (HDR)	Dispatchable Load
Avoidable fixed costs	-	Demand Response Auction price	Demand Response Auction price
Avoidable variable costs & value of lost load (VOLL)	Energy Market offer	Energy Market bid	Energy Market bid
Other "out of market" costs	Start-up costs guaranteed through the Generator Cost Guarantee (GCG)	?	?

## Scenario 2 – Post-Transitional Capacity Auction

Different Bidding Strategies in IESO Administered Markets

	Off-Contract Dispatchable Generation	Demand Response	
Cost Categories		Hourly Demand Response (HDR)	Dispatchable Load
Avoidable fixed costs	Transitional Capacity Auction price	Transitional Capacity Auction price	Transitional Capacity Auction price
Avoidable variable costs & Value of lost load (VOLL)	Energy Market offer	Energy Market bid	Energy Market bid
Other "out of market" costs	Start-up costs guaranteed through Generator Cost Guarantee (GCG)	Activation costs for out-of-market emergency or test activations paid by IESO	?

# TAB 2

# EXTRACTS FROM EVIDENCE OF DR. BRIAN RIVARD

#### Figure 1: DR Corp. and GENCorp. are identical in all relevant aspects

DR Corp.		GEN Corp.				
Demand 6 MWh VOLL \$10,000 /MWh	Capacity 4 MW MC \$100/MWh FA Cost \$1,000	Demand 6 MWh VOLL \$10,000 /MWh	Capacity 4 MW MC \$100/MWh FA Cost \$1,000			
2 MWh	4 MWh	6 MWh	4 MWh			
IESO Energy Market Market Price = \$100/MWh						
Cost = 2MWh x \$10 Rev Net IESO Settleme	00/MWh = -\$200 = \$0 nt = -\$200	Cost = 6MWh x \$100/MWh Rev = \$4MWh x \$100/MWh Net IESO Settlement	= -\$600 = \$400 = -\$200			
With G Energy at Voll Net IESO Settlement Marginal Cost FA Cost Net Value	enerator = \$60,000 = -\$200 = -\$400 <u>= -\$1,000</u> = \$58,400	With General Energy at Voll Net IESO Settlement Marginal Cost FA Cost Net Value	tor = \$60,000 = \$200 = \$400 = \$1,000 = \$58,400			
Without Energy at Voll Net IESO Settlement Marginal Cost FA Cost Net Value	Generator = \$60,000 = -\$600 = \$0 = \$0 = \$0 = \$59,400	Without Gener Energy at Voll Net IESO Settlement Marginal Cost FA Cost Net Value	rator = \$60,000 = -\$600 = \$0 = \$0 = \$59,400			
/	Opportunity Cost of Generator = -\$1,000		Opportunity Cost of Generator = -\$1,000			
Opportunity C = -\$	ost of Generator 1,000	Opportunity Cost of = -\$1,000	Generator			

#### Figure 1.A: No Energy Payments for DR Resources

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Figure 1.B: Energy Payments for DR Resources

37. With an expected market price of \$100/MWh, DR Corp. anticipates that it will receive an economic activation to reduce its net-metered load by 4 MWh. It will not receive an energy payment for this activation, so as AMPCO argues, it will not be able to incorporate this revenue in the calculation of its capacity offer price. DR Corp. will make an energy payment to the IESO of \$100/MWh x 2 MWh = \$200 for its net-metered demand. It will incur a cost of \$100/MWh x 4 MWh = \$400 to generate electricity to

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#### Figure 2: DR Corp. has a higher fixed avoided cost



#### Figure 2.A: No Energy Payments for DR Resources

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Figure 2.B: Energy Payments for DR Resources

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#### Figure 3: GEN Corp. has a lower marginal generation cost

#### DR Corp. GEN Corp. Demand Demand Capacity Capacity 4 MW 6 MWh 6 MWh 4 MW \$100/MWh \$80/MWh \$10,000 FA Cost \$10,000 FA Cost \$1,000 /MWh \$1,000 2 MWh 4 MWh 6 MWh 4 MWh IESO Energy Market Market Price = \$100/MWh Cost = 2MWh x \$100/MWh Cost = 6MWh x \$100/MWh = \$0 Rev = \$4MWh x \$100/MWh = \$400 Rev Net IESO Settlement Net IESO Settlement With Generator With Generator Energy at Voll = \$60,000 Energy at Voll = \$60,000 Net IESO Settlement Net IESO Settlement = -\$200 = -\$200 **Marginal** Cost = -\$400 **Marginal** Cost = -\$320 FA Cost = -\$1,000 FA Cost = -\$1,000 Net Value = \$58,400 Net Value = \$58,480 Without Generator Without Generator Energy at Voll = \$60,000 = \$60,000 Energy at Voll Net IESO Settlement = -\$600 Net IESO Settlement = -\$600 Marginal Cost = \$0 Marginal Cost = \$0 FA Cost = \$0 FA Cost <u>= \$0</u> Net Value = \$59,400 Net Value = \$59,400 **Opportunity Cost of Generator Opportunity Cost of Generator** = -\$1,000 = -\$920 TCA Offer:

#### Figure 3.A: No Energy Payments for DR Resources

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#### Figure 3.B: Energy Payments for DR Resources

46. In Figure 3, I modify the original example by assuming GEN Corp. has a marginal generation cost of \$80/MWh, which is lower than the \$100/MWh marginal generation cost of DR Corp. In this case, GEN Corp earns a net revenue equal to the difference between the energy market price of \$100/MWh and its marginal generation cost of \$80/MWh; a benefit of \$20/MWh that it can contribute to the recovery of its fixed avoided cost of making the generator available. It can factor this amount into its capacity offer price. Again, I draw a distinction between the net revenue and the full energy

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Figure 4: Effects of the Global Adjustment





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Figure 4.B: Energy Payments for DR Resources







### Figure 1.B': Energy Payments for DR Resources