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Excess Capacity in a Buyer's Market: Advantages for Buyers and Sellers

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An SAIC Company

Presentation Overview

- Excess capacity - why?
- Sales strategy
 - Revenue goal
 - Capacity or energy product
 - Pricing
- Examples
 - Seller/buyer situation
 - Pricing perspectives

Excess Capacity - Why?

- Block additions
- Load reduction
- Economics

Excess Capacity - Block Additions

- Power supply contract options
- Economies of scale
- Power supply options meet projected need for multiple years
- While “growing into” power supply, excess capacity is available for sale

Excess Capacity - Load Reduction

- Unplanned decline in demand
 - The economy results in customers leaving the system
 - The weather is milder than forecast
 - A contract is cancelled
- Planned
 - Conservation programs (lighting, insulation, etc.)
 - Client generation (solar, wind, microturbine)

Excess Capacity - Economics

- Adding power supply resources may reduce average system cost even though reserve margins are exceeded
- Excess capacity may be expensive to your system but attractive to another system

Excess Capacity Sale

- Revenue from a sale must exceed the increase in your cost to produce the power
- Revenue from a sale can reduce variable or fixed costs or both

Sales Tailored to the Buyer's Needs

- Energy and capacity
- Energy only
- Capacity only

Pricing a Sale

- Price structure can vary widely for different reasons
- For profit on the sale - Price of sale exceeds the incremental variable cost to produce power plus the average fixed cost of the seller
- For continued operation of a unit - revenue from the sale offsets operating and start costs to allow continued operation of units that cannot be easily cycled off (e.g., at night or during a weekend)

Example Seller/Buyer Systems

	Seller	Buyer
Peak Load (MW)	3,000	1,000
Total Resources (MW)	3,050	950
Net Load (MWh)	26,280,000	8,760,000
Energy Rate (\$/MWh)	48.15	49.67
Demand Rate (\$/kW-mo)	9.40	16.67
Incremental Energy Rate (\$/MWh)	96.55	115.86
Incremental Demand Rate (\$/kW-mo)	-	4.55

Seller's incremental cost is from own resources

Buyer's incremental cost is from market resources

MW = megawatt

MWh = megawatt hour

kW-mo = kilowatt-month

Seller/Buyer System Cost - No Sale

	Seller	Buyer
Energy from Own Resources (MWh)	26,280,000	8,322,000
Energy from Purchases (MWh)	-	438,000
Energy Cost (\$millions)	1,265.5	464.1
Fixed Cost (\$millions)	338.5	192.7
Average Energy Cost (\$/MWh)	48.15	52.98
Average Fixed Cost (\$/MWh)	9.40	16.06
Average All-in Cost (\$/MWh)	61.03	74.98

Buyer is meeting load through a purchase from the market

MWh = megawatt hour

Buy/Sell Options

	Capacity Pricing	Energy Pricing
Option 1	At Market	At Market
Option 2	At Market	Split Savings
Option 3	At Market	At Seller Incremental
Option 4	Above Market	Below Incremental, Above System Average
Option 5	At Market	At System Average

Option 1: Capacity at Market, Energy at Market

	Seller	Buyer
Sale Capacity (MW)	50	50
Energy Charge (\$/MWh)	115.86	115.86
Capacity Charge (\$/kW-mo)	4.55	4.55
Energy from Owned Resources (MWh)	26,718,000	8,322,000
Energy from Sale (MWh)	438,000	-
Energy from Purchases (MWh)	-	438,000
Net Load (MWh)	26,280,000	8,760,000

MW = megawatt

MWh = megawatt hour

kW-mo = kilowatt-month

Option 1: Revenue and Cost

	Seller	Buyer
Energy Cost of Sale (\$millions)	42.3	
Fixed Cost of Sale (\$millions)	-	
Energy Cost (\$millions)	1,307.8	413.4
Fixed Cost (\$millions)	338.5	190.0
Sale Energy Revenue/Cost (\$millions)	50.7	50.7
Sale Capacity Revenue/Cost (\$millions)	2.7	2.7
Net Total Power Cost (\$millions)	1,592.8	656.8

Option 1: Average Cost

	Seller	Buyer
Before Sale		
Average Energy Cost (\$/MWh)	48.15	
Average Fixed Cost (\$/MWh)	9.40	
After Sale		
Average Energy Cost (\$/MWh)	47.73	52.98
Average Fixed Cost (\$/MWh)	9.33	16.06
Average All-in Cost (\$/MWh)	60.61	74.98
Delta Average All-in Cost (\$/MWh)	-0.43	-

Energy revenue from the sale is used to reduce average energy cost
Capacity revenue from the sale is used to reduce average fixed cost

MWh = megawatt hour

Option 1: Observations

- Sale at market reduces seller's capacity cost
- Seller's all-in average cost declines
- Buyer's cost is unchanged
- Buyer may reduce risk by securing a firm purchase instead of a market purchase

Buy/Sell Options Pricing

	Capacity Pricing (\$/kW-mo)	Energy Pricing (\$/MWh)
Option 1	4.55	115.86
Option 2	4.55	106.21
Option 3	4.55	96.55
Option 4	20.00	80.00
Option 5	4.55	48.95

MWh = megawatt hour

kW-mo = kilowatt-month

Sale Option Results

	Seller Average			Buyer Average		
	Capacity (\$/kW-mo)	Energy (\$/MWh)	All-in (\$/MWh)	Capacity (\$/kW-mo)	Energy (\$/MWh)	All-in (\$/MWh)
No Sale	9.40	48.15	61.03	16.06	52.98	74.98
Option 1	9.33	47.83	60.61	16.06	52.98	74.94
Option 2	9.33	47.99	60.77	16.06	52.50	74.50
Option 3	9.33	48.15	60.93	16.06	52.01	74.02
Option 4	9.07	48.43	60.85	16.83	51.19	74.25
Option 5	9.33	48.95	61.72	16.06	49.63	71.64

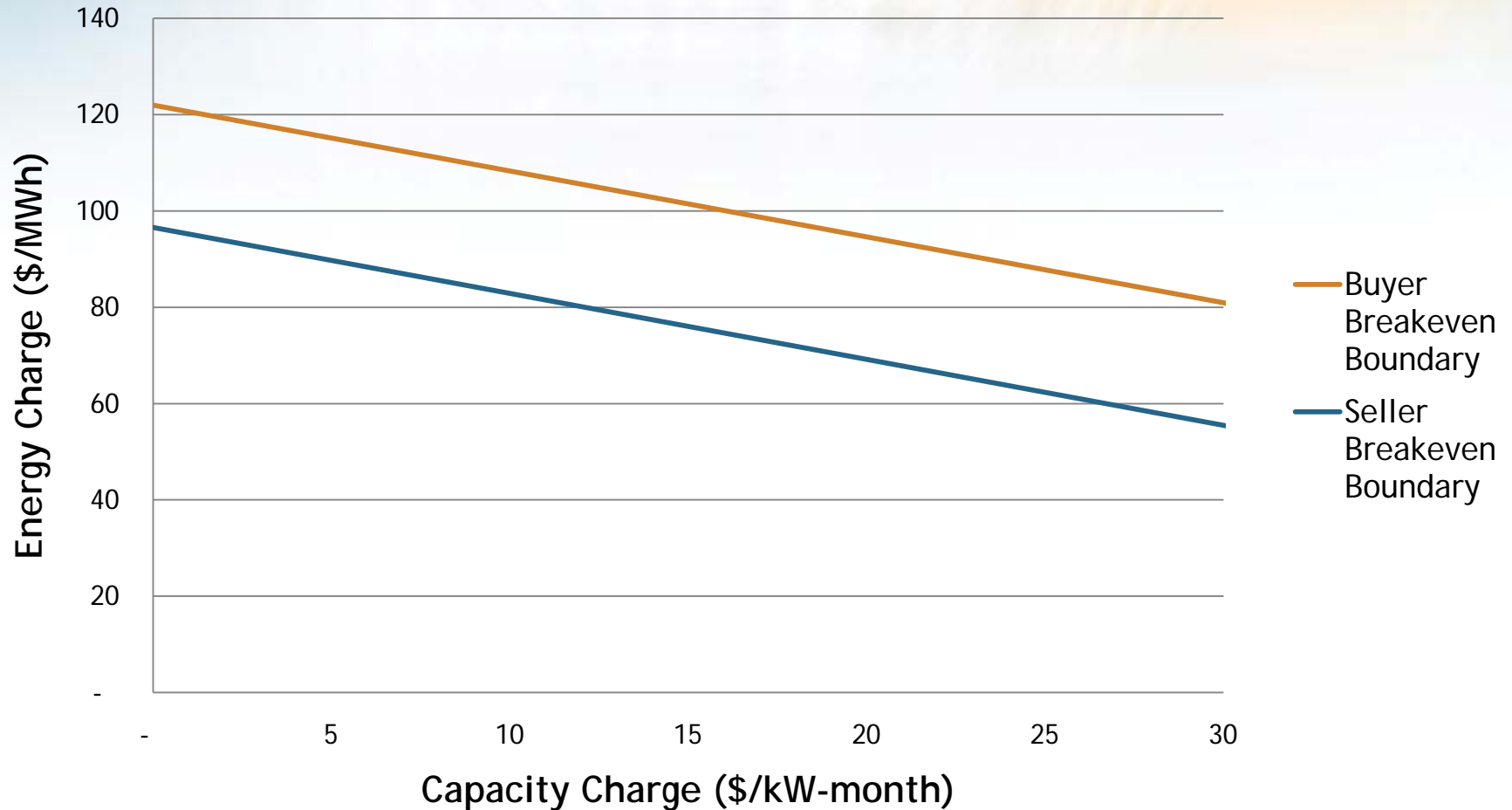
- As pricing changes, determining value to seller becomes more difficult
- Average capacity or average energy cost may increase
- All-in average cost is key indicator of whether a sale is beneficial to seller and buyer

MWh = megawatt hour

kW-mo = kilowatt-month

Pricing Options Are Limited

Breakeven Sale Pricing



MWh = megawatt hour

kW = kilowatt

Observations

- Excess capacity can be sold at a price that:
 - Reduces the seller's cost
 - Increases the seller's cost
- Total system cost must be considered rather than individual analysis of variable and fixed costs
- Detailed representations of seller and buyer systems are critical

Questions?

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