Demand Response: Analyzing the Double-Payment Order

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Market Surveillance Committee Meeting
General Session
April 29, 2011
Double Payment: The Fundamental Flaw

DR providers will be paid twice:
1. G by load (for reduced retail bills)
2. LMP by the ISO (required by Order 745)

DR should receive LMP. Now DR receives G.
- So the ISO should, in effect, pay DR: LMP – G

What if we did?
- Suppose Net-Benefit Threshold = $51/MWh
- Suppose LMP = $50, and G = $100
- FERC says: Don’t pay them.
- But we should pay them LMP – G = $50 – $100 → $0
- Double Payment is The Fundamental Flaw
What Economics Matters?

➢ This is not a how-to-design problem.

➢ This is a prove-it-is-legally-wrong problem.

➢ We know of too many economic flaws

➢ Those flaws that
  ▪ support a legal point
  ▪ are bullet proof
  ▪ can be explained with great clarity

are most valuable to the CAISO.
Double-Payment Failures

1. Behind vs. In-front-of the meter [Economics]
   ▪ Arbitrary and capricious [use ?]

2. Inefficient: Overpayment hurts consumers
   ▪ Rates not just and reasonable [?]

3. “Benefit” is not real ⇒ cannot justify overpayment
   ▪ Preferential and unduly discriminatory [?]

4. Double Payment will exacerbate phantom DR problem
   ▪ [?]
1. Where’s the Meter?

Generation =
- Solar PV
- Fuel Cell
- Diesel

Hard to detect.

Common in the East.

OK with FERC.
All agree that supply is paid correctly (LMP).

CAISO would effectively pay DR the same as supply.

FERC requires significant preferential treatment for DR.
2. Overpayment Hurts Consumers

- Getting the price wrong (LMP+G rather than LMP) always causes inefficiency — increased production costs.

- An inefficient diesel may run behind the meter to capture LMP+G when it would not be run as supply.

- Ultimately load customers will bear this extra cost.

- FERC relies on the net-benefits test to attempt to prove the opposite.

  “First, demand response resources ... can be cost-effective, as determined by the net benefits test.”
3. “Benefits” Are Not Real

- Double Payment causes most problems
- Net Benefit “justifies” double payment.
- “Benefits” come from revenues that generators need to cover their fixed costs (capacity costs).
- FERC appears to believe they come from DR savings
  “This Final Rule is focused only on organized wholesale energy markets, not capacity markets.”
- So FERC did not discover the source of “benefits.” Revealing this, underpins the critiques of the net benefit test in this presentation.
Before Demand Response

- **Price**
  - Initial LMP
  - Fixed-Cost (capacity) Revenues
    - [gross margin]
  - Variable-Cost (fuel) Revenues
- **Demand**
- **Supply**

- MW
Where “Benefits” Comes from:

- Non-DR Load’s LMP paid for DR.
- From capacity revenues for still-needed generation.
The Long-Run (metaphorical) Struggle for “Benefits”

- 745 attempts to shift $: Gens ➔ Load
- The market attempts to shift $: Load ➔ Gens
- If DR keeps ahead of load growth and gen. retirement, 745 will win, and all generation will end up behind the meters. Victory for monopsony power.
  - In the end, load loses anyway—no one to take money from.
- If DR is limited, then new ISO supply will be needed, and the market will win, by raising prices to the point where investors will return.
  - “Benefits” canceled by high prices.
Specific Effects in the Struggle for “Benefits”

1. During 745 startup: Forward contracts prevent the flow of “benefits.”

2. Sooner or later vertically integrated utilities will be able to start re-capturing lost revenues from consumers.
   ▪   (If the capacity market doesn’t end the revenue losses.)

3. In systems that need new capacity soon, the capacity market may negate “benefits” a couple of years after start-up.

✓   For all three: The slower the start of 745, the more the market will expect it, and the quicker benefits will vanish.
4. Phantom Demand Response

- FERC has directed ISOs to “develop appropriate revisions and modifications, if necessary, to ensure that their baselines remain accurate and that they can verify that demand response resources have performed.”

- However, the elimination of minimum bid prices would allow DR resources to bid so low that they are always providing DR and the ISO could not detect a fraudulent baseline.

- This can, in aggregate, entail large payments by consumers without any offsetting benefit.