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Day-Ahead Production Cost Guarantees

Design Working Group Meeting
April 21, 2009

Agenda

1. Day-Ahead Production Cost Guarantee
   - Description and Examples
2. Guarantee Calculations with De-commitments and Withdrawals
3. Guarantee Calculation with Two EDAC Schedules within the Day
4. Guarantee Calculation When Operating Across Days
5. Compliance Requirements
6. Settlement Statements and New Charge Types

Overview of DA-PCG

- The Day-ahead Generation Cost Guarantee is replaced with the Day-ahead Production Cost Guarantee (DA-PCG)
- The DA-PCG guarantees eligible resources cost recovery when dispatched to produce in the real-time market as committed in EDAC
  - Cost recovery is available when the real-time revenue is insufficient to cover as-offered costs

DA-PCG versus DA-GCG

- DA-PCG is based upon information submitted in advance of the EDAC results
- DA-PCG is based on the total day-ahead schedule rather than just minimum loading point for MGBRT as used in current DACP
- DA-PCG will be calculated for all eligible resources receiving day-ahead commitments and schedules

DA-PCG Eligibility

- A dispatchable generator will be deemed eligible for DA-PCG if:
  - not a quick start facility; **and**
  - has a minimum loading point greater than zero; **and**
  - has a minimum generation block run-time greater than one hour; **and**
  - has a need to initiate start up sequences greater than one hour in advance of the hour in which they first receive a schedule, in order to respond to a dispatch associated with their constrained schedules.

Three Part Offers Recap

- Three-part offers include:
  1. Start-Up – value to bring generator up to minimum loading point (may also include amounts associated with ramp down from minimum loading point) - $ per start
  2. Speed No-Load – value associated with operating generator with no net energy to grid - $ per hour
  3. Incremental Energy – energy offers for entire dispatchable range of generator - $/MWh

DA-PCG
Components

- The DA-PCG consists of 4 components plus start-up:

1. Shortfall in payment for day-ahead scheduled energy that is dispatched in real-time
2. Value of arranging day-ahead scheduled energy that is not dispatched in real-time
3. Income from real-time CMSC associated with the day-ahead scheduled energy

DA-PCG
Components

4. Net income from real-time OR for MWs up to the day-ahead schedule not dispatched in real-time
5. Start-up

Total **DA-PCG** equals **Component 1** plus **Component 2** minus **Component 3** minus **Component 4** plus **Start-up**

DA-PCG Calculation Scenarios

- Six possible orderings of the amount of a generator's capacity that may be included in the Day-Ahead Constrained Schedule (DACS), Real-time Constrained Schedule (RTCS) and Real-time Unconstrained Schedule (RTUS) for any interval:
    1. RTCS > RTUS > DACS
    2. RTUS > RTCS > DACS
    3. RTCS > DACS > RTUS
    4. RTUS > DACS > RTCS
    5. DACS ≥ RTCS > RTUS
    6. DACS ≥ RTUS > RTCS

DA-PCG Calculation Scenarios

- Inclusion of each of the four components in the DA-PCG calculations for each scenario defined in previous slide is shown in the table below

Scenario		Component 1	Component 2	Component 3	Component 4
1	RTCS>RTUS>DACS	Y	N	0	N
2	RTUS>RTCS>DACS	Y	N	0	N
3	RTCS>DACS>RTUS	Y	N	Y (Partial CMSC)	Y
4	RTUS>DACS>RTCS	Y	Y	Y (Partial CMSC)	N
5	DACS>=RTCS>RTUS	Y	Y	Y (All CMSC)	Y
6	DACS>=RTUS>RTCS	Y	Y	Y (All CMSC)	Y

DA-PCG Daily Calculations

- Components 1 – 4 are calculated on a 5-minute interval basis
- The associated start-up costs for each start are summed for the day
- If the sum all Components 1 through 4 plus start up costs for the day is less than zero (i.e. a charge for that resource), a reversal payment will be made

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DA-PCG

Components 1 - 4

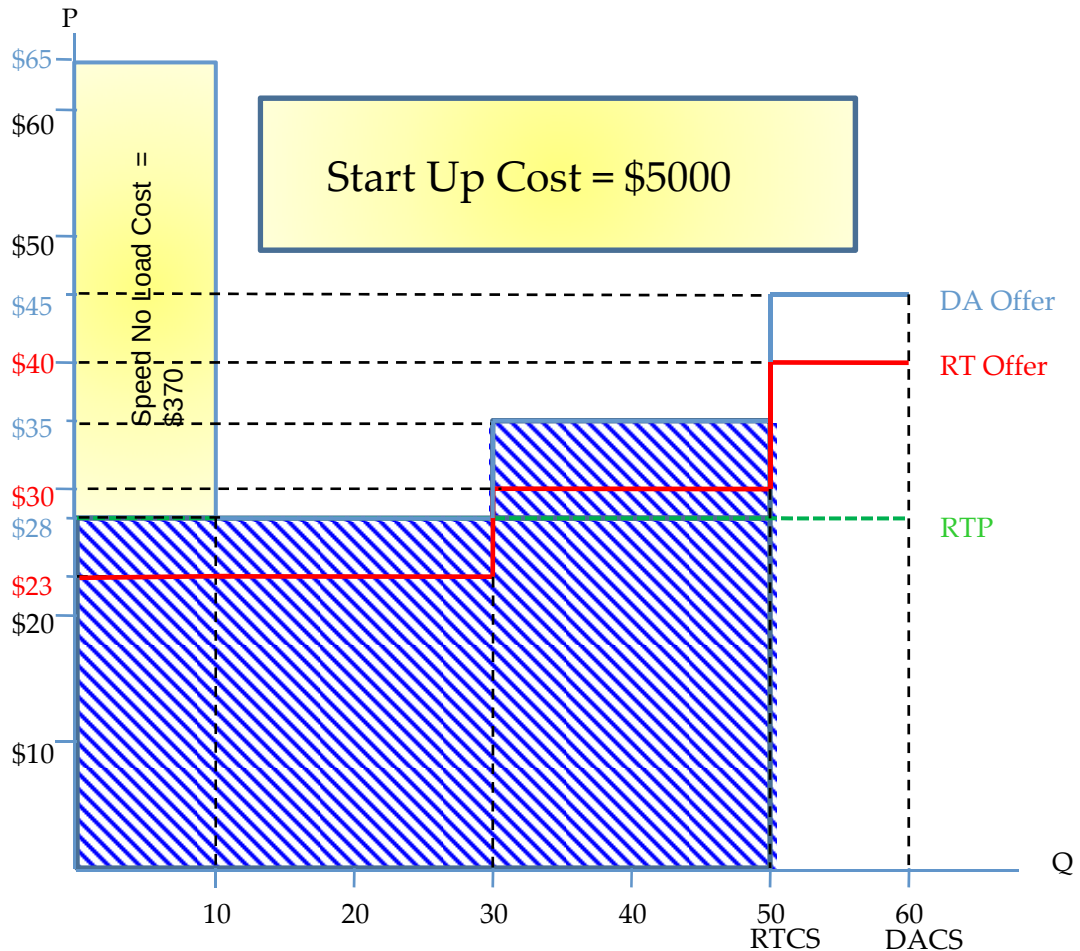
Basic DA-PCG Calculations Input Data

Start Up ($)		$5,000	
Speed No Load ($/hr)		$370	
DA Incremental Energy Offers		RT Incremental Energy Offers	
Price	Qty	Price	Qty
$ 28	10	$ 23	10
$ 28	30	$ 23	30
$ 35	50	$ 30	50
$ 45	60	$ 40	60
Minimum Loading Point (MLP) is 10 MW			

Input Data	***Qty***	***Description***
DACS (MW)	60	Day-Ahead Constrained Schedule
RTCS (MW)	50	Real-Time Constrained Schedule
RTP ($/MW)	$ 28	Real-Time price

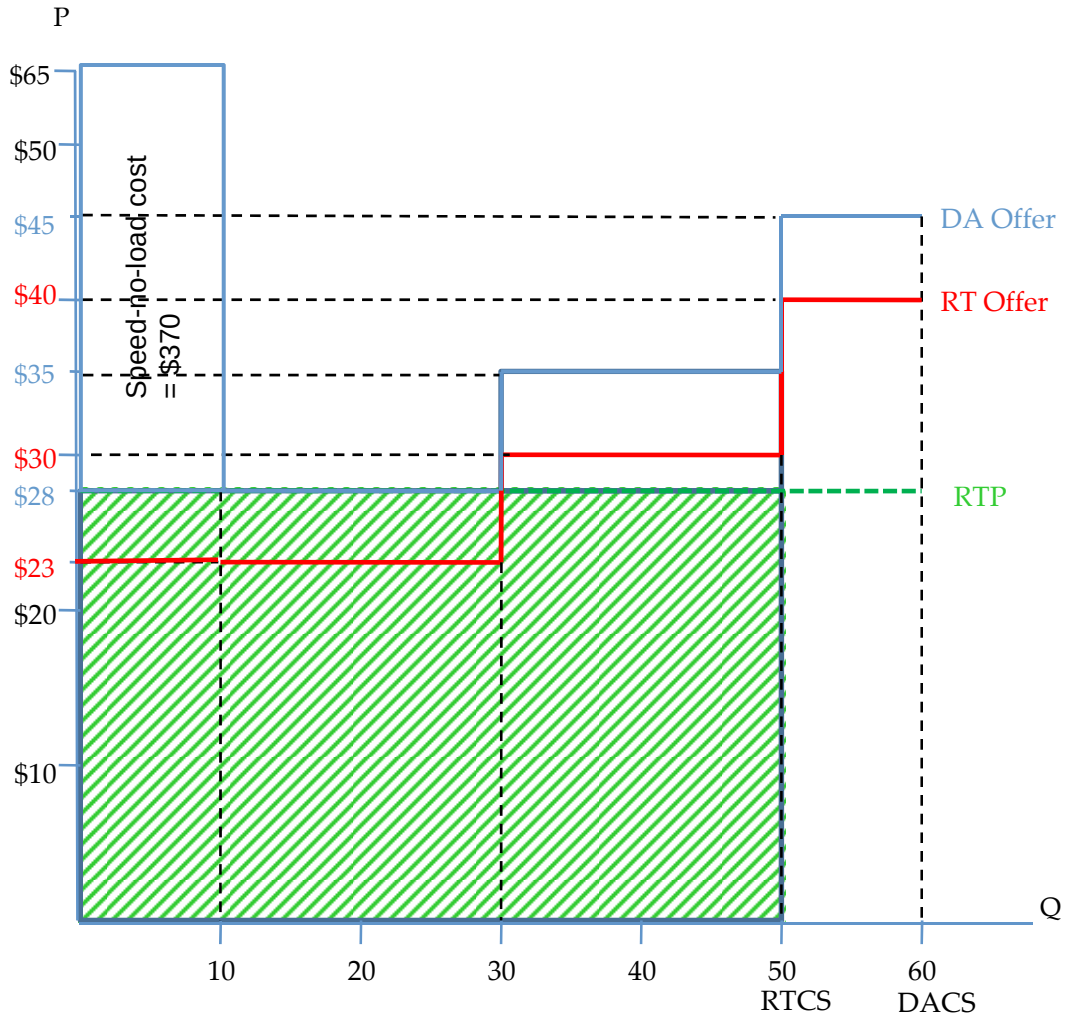
DA-PCG - Component 1
Term 1

$$\text{Term 1} = \left(\int_{0}^{\min(DACS, RTCS, AQEI)} DAO \right)$$



DA-PCG - Component 1 Term 2

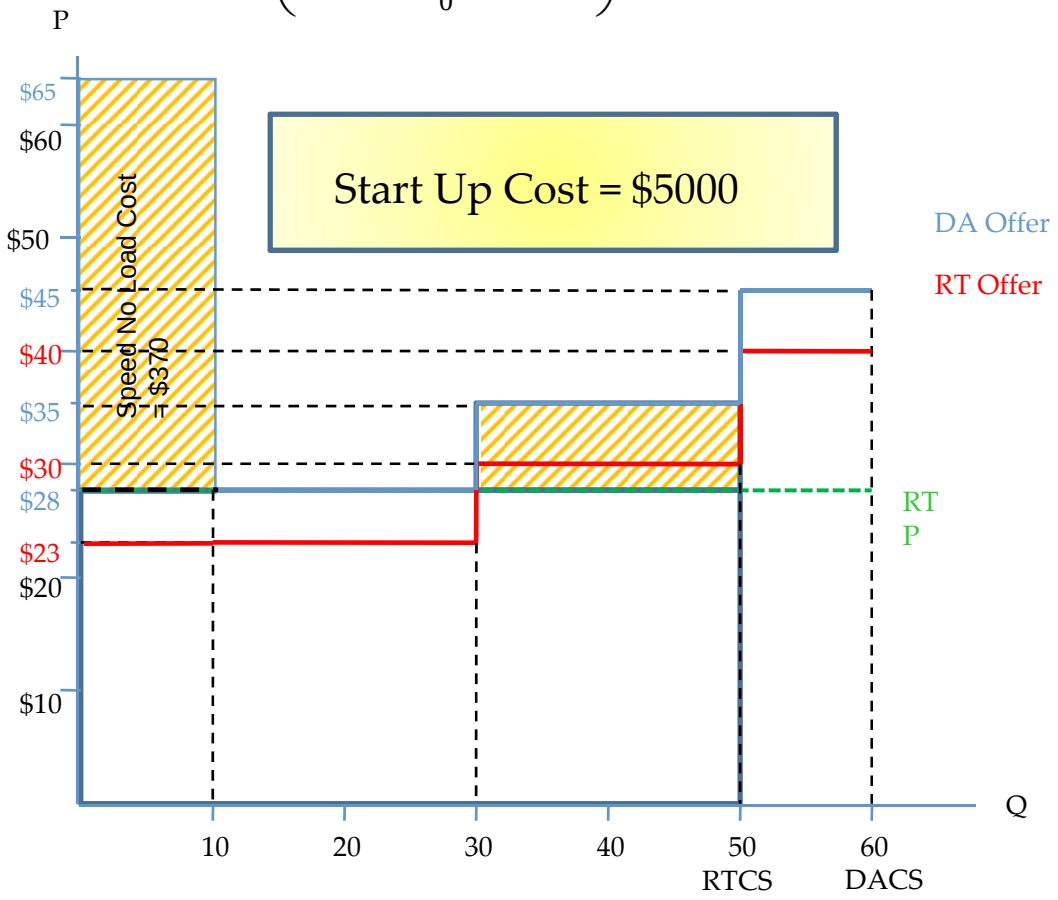
- Term 2 = $[RTP \times \min(DACS, RTCS, AQEI)]$



DA-PCG - Component 1

- Component 1 = Term 1 – Term 2

$$= \left(\int_{0}^{\min(DACS, RTCS, AQEI)} DAO \right) - [RTP \text{ x } \min(DACS, RTCS, AQEI)]$$



DA-PCG Calculation
Component 1

1. Shortfall in payment for day-ahead scheduled energy that is dispatched in real-time:

day-ahead offer for the lesser of the day-ahead schedule and real-time dispatch

} day-ahead as-offered costs

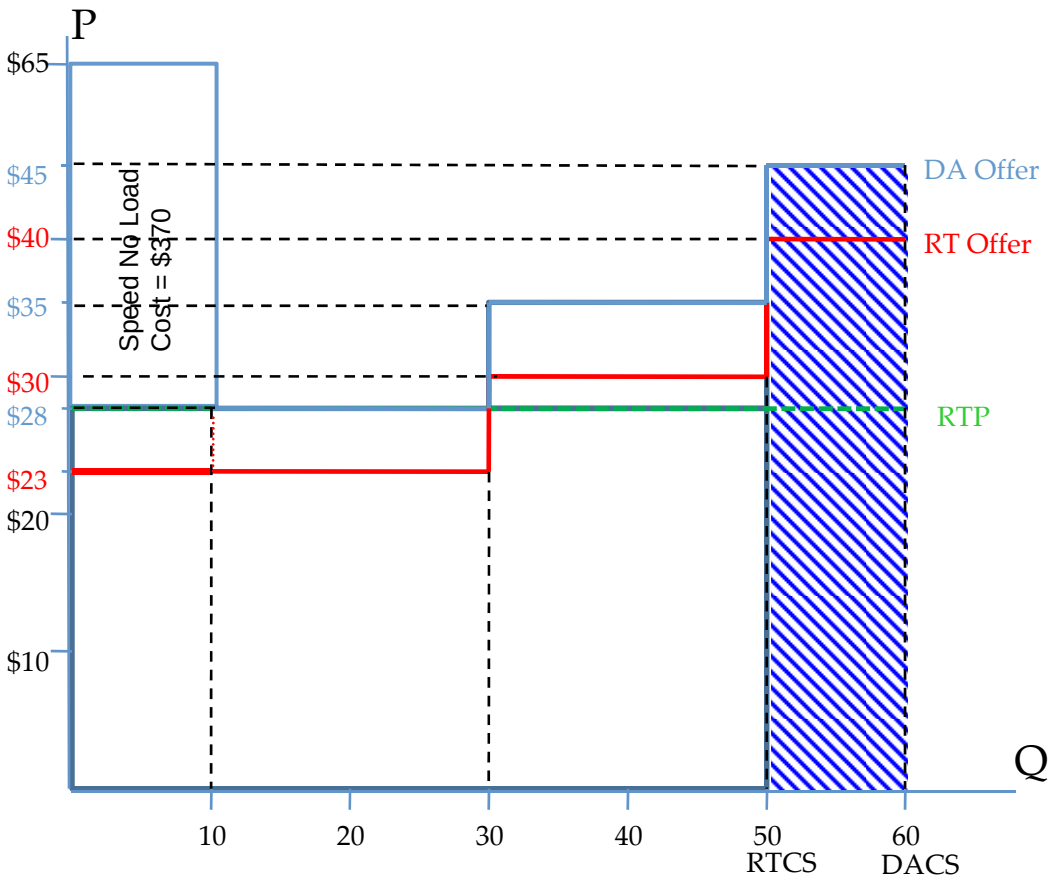
minus

real-time revenue received for this same amount dispatched in real-time

} real-time revenues

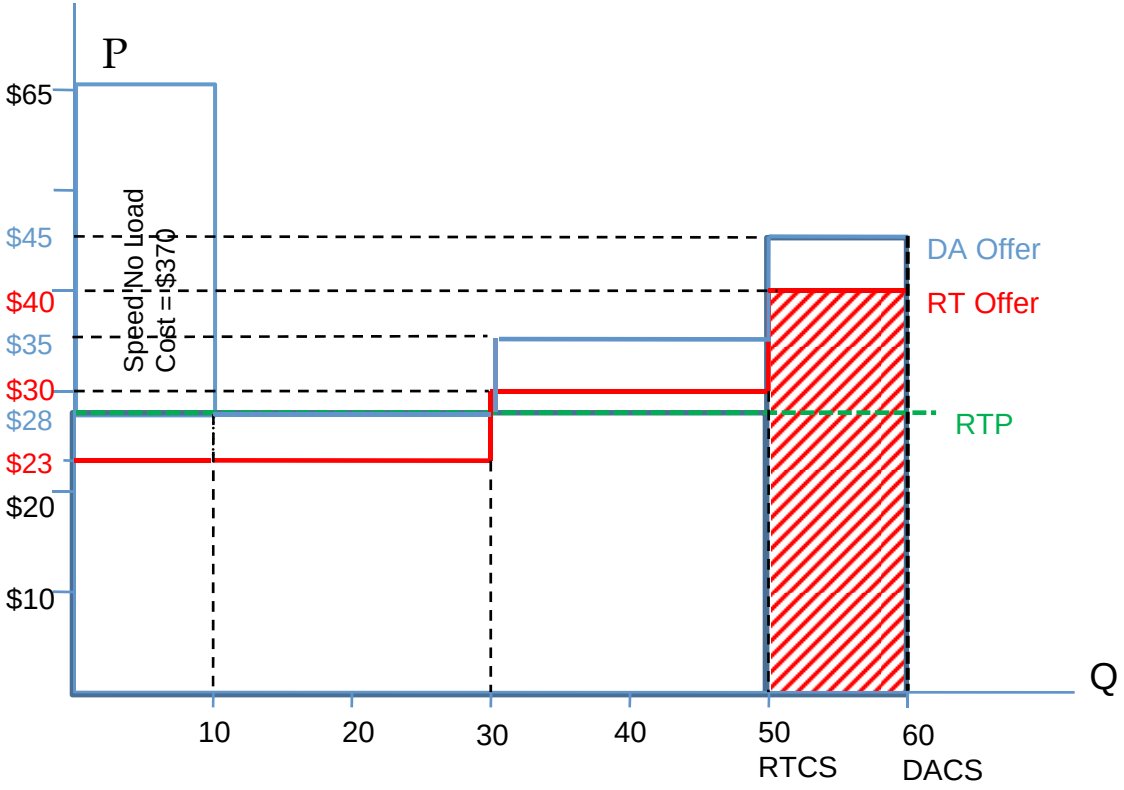
DA-PCG - Component 2
Term 1

- Term 1 = $\left(\int_{Min(DACS, OpCap, (\max(RTCS, AQEI)))}^{Min(DACS, OpCap)} DAO \right)$



DA-PCG - Component 2
Term 2

- Term 2 = $\left(\int_{Min(DACS, OpCap, (\max(RTCS, AQEI)))}^{Min(DACS, OpCap)} RTO \right)$

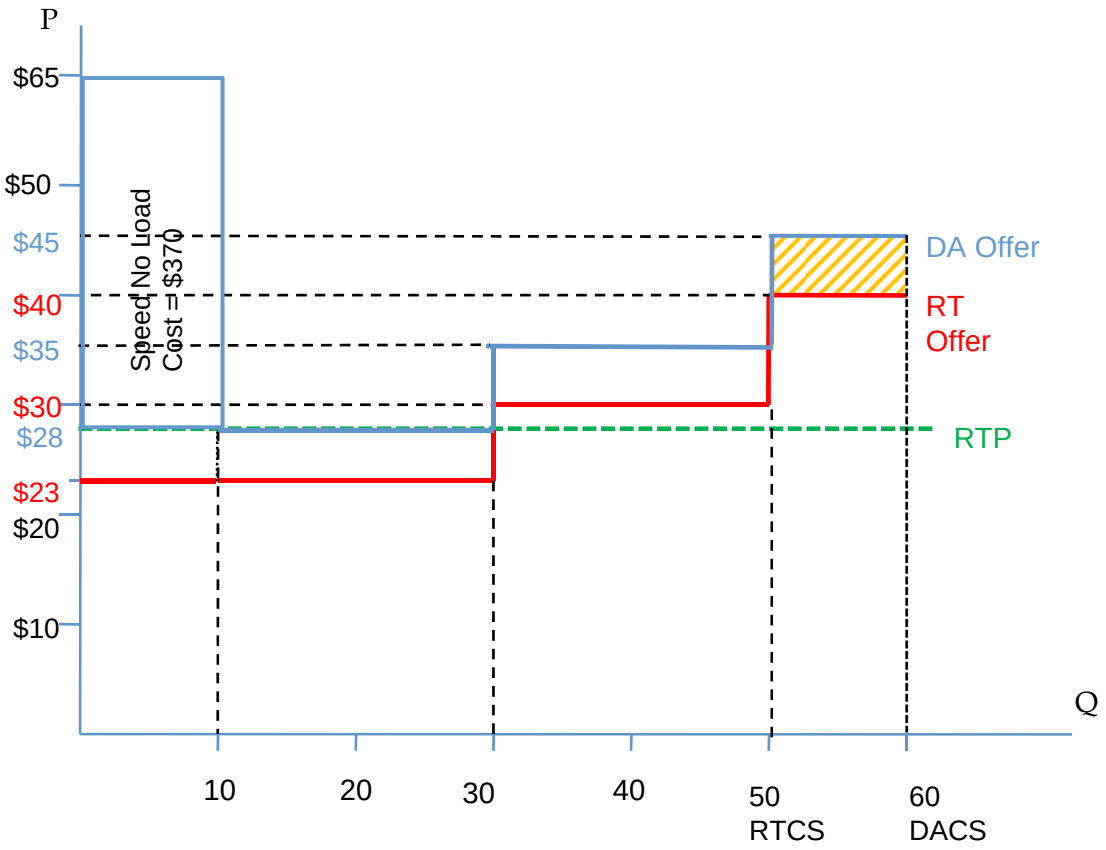


Note: OpCap is the de-rated value of the generator

DA-PCG - Component 2

- Component 2 = Term 1 – Term 2

$$= \left(\int_{Min(DACS, OpCap, (\max(RTCS, AQEI)))}^{Min(DACS, OpCap)} DAO \right) - \left(\int_{Min(DACS, OpCap, (\max(RTCS, AQEI)))}^{Min(DACS, OpCap)} RTO \right)$$



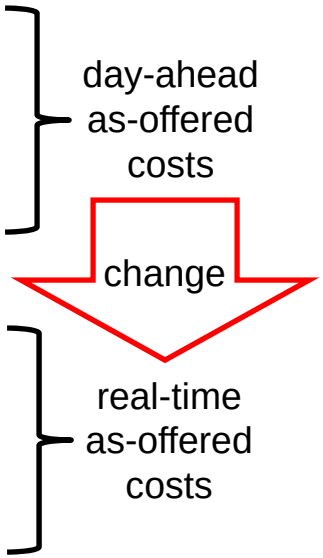
DA-PCG Calculation
Component 2

2. Value of arranging day-ahead scheduled energy that is not dispatched in real-time

day-ahead offer to increase the output from the real-time dispatch to the day-ahead schedule

minus

real-time offer to increase output from the real-time dispatch to the day-ahead schedule



notes: a. component 2 only applies when real-time dispatch is less than day-ahead schedule
b. component 2 may be a negative value

CMSC

- The equations used in calculating CMSC in real-time are:
- For Constrained On CMSC

$$\int_{RTUS}^{RTCS} RTO - RTP \cdot (RTCS - RTUS)$$

- For Constrained Off CMSC

$$RTP \cdot (RTUS - RTCS) - \int_{RTCS}^{RTUS} RTO$$

- Where RTO = Real-time Offer and
  RTP = Real-time Price

DA-PCG - Component 3

Input Data for Scenario 3 (Constrained On)

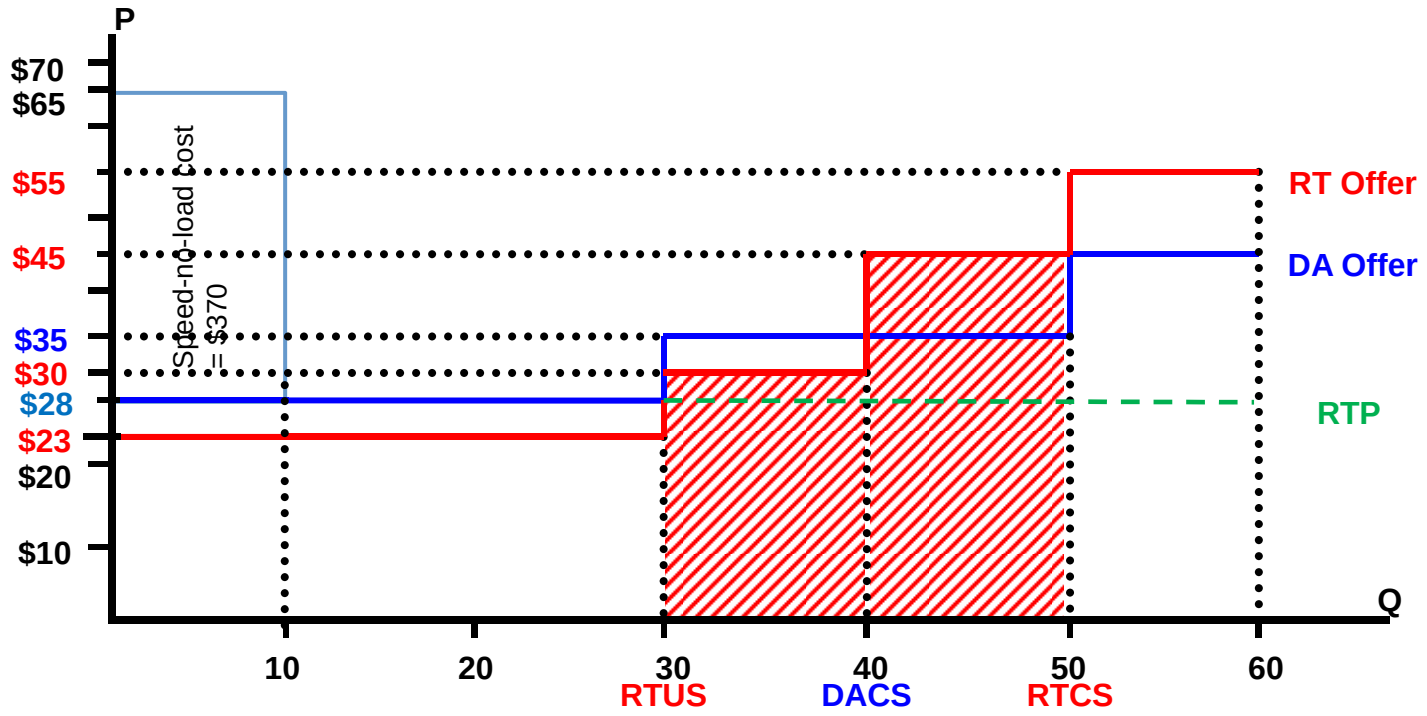
Start Up ($)			$5,000	
Speed No Load ($/hr)			$370	
DA Incremental Energy Offers			RT Incremental Energy Offers	
Price		Qty	Price	Qty
$	28	10	$ 23	10
$	28	30	$ 23	30
$	35	50	$ 30	40
$	45	60	$ 45	50
			$ 55	60
Minimum Loading Point (MLP) is 10 MW				

Schedule/Price	***Qty***	***Description***
DACS (MW)	40	**Day-Ahead Constrained Schedule**
RTCS (MW)	50	**Real-Time Constrained Schedule**
RTUS (MW)	**30**	**Real-Time Un-Constrained Schedule**
RTP ($/MW)	**$28**	**Real-Time price**

DA-PCG - Component 3

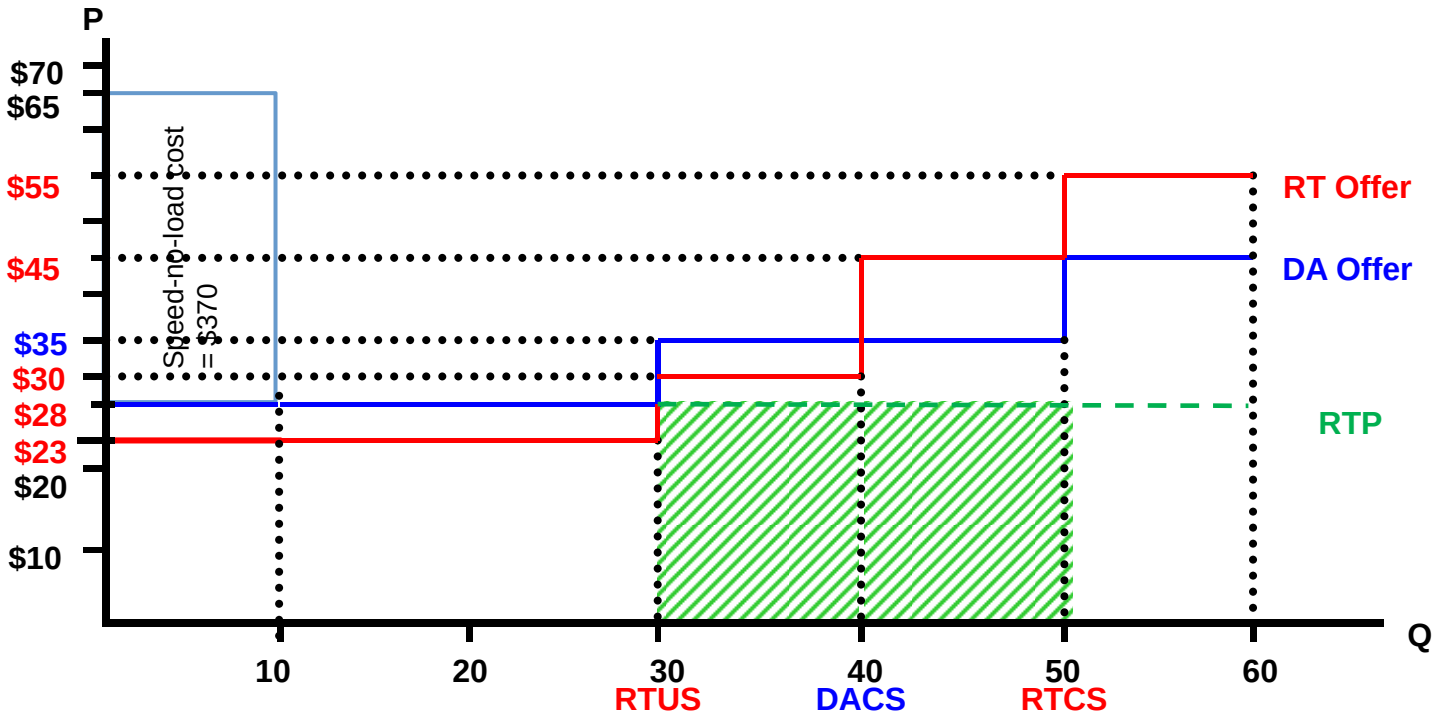
Real-Time Constrained On CMSC – Term 1

- Term 1 = $\int_{RTUS}^{RTCS} RTO$



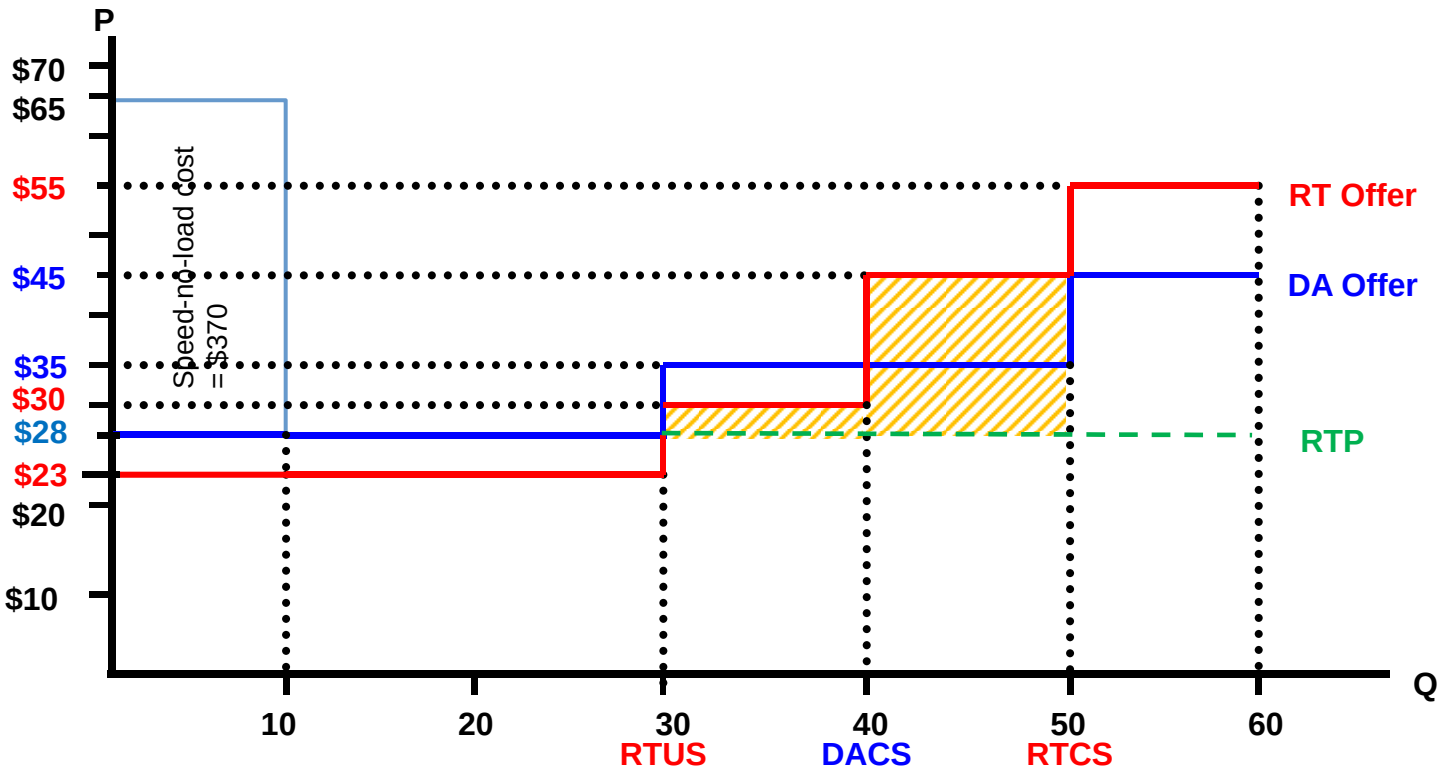
DA-PCG - Component 3
Real-Time Constrained On CMSC – Term 2

- Term 2 = $RTP \cdot (RTCS - RTUS)$



DA-PCG - Component 3
Real Time Constrained On CMSC

- CMSC = Term 1 – Term2 = $\int_{RTUS}^{RTCS} RTO - RTP \cdot (RTCS - RTUS)$,

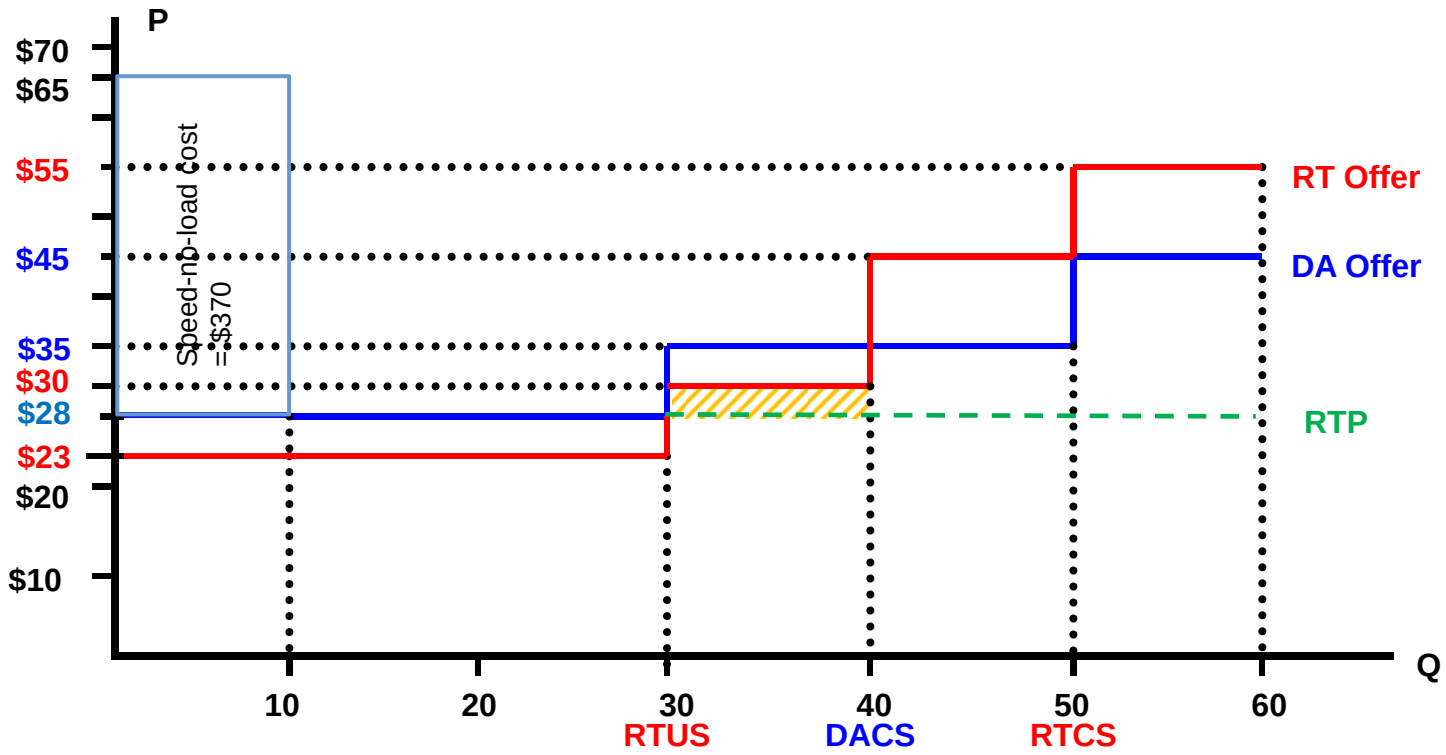


DA-PCG - Component 3

Constrained On CMSC Used in DA-PCG Calculation

- Portion of the constrained-on capacity that is included in the DACS is:

$$CMSC = \int_{RTUS}^{DACS} RTO - RTP \cdot (DACS - RTUS)$$



DA-PCG Calculation
Component 3 – Constrained On

3. Income from real-time CMSC associated with the day-ahead scheduled energy:

real-time offer for the difference of the day-ahead schedule and real-time unconstrained schedule

real-time as-offered costs

minus

real-time revenue received for this same amount dispatched in real-time

real-time revenues

DA-PCG - Component 3

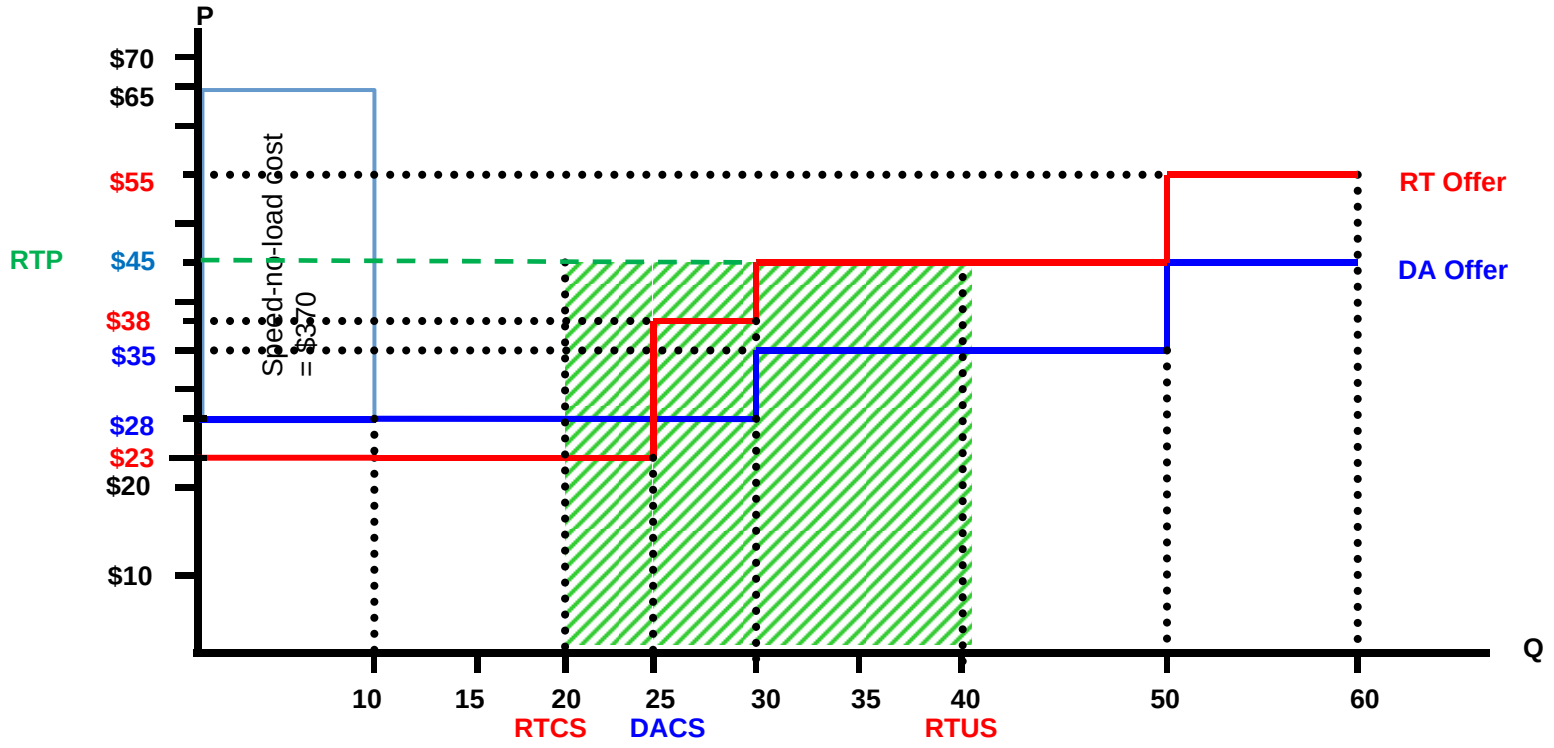
Input Data for Scenario 4 (Constrained Off)

Start Up ($)		$5,000	
Speed No Load ($/hr)		$370	
DA Incremental Energy Offers		RT Incremental Energy Offers	
Price	Qty	Price	Qty
$ 28	10	$ 23	10
$ 28	30	$ 23	25
$ 35	50	$ 38	30
$ 45	60	$ 45	50
		$ 55	60
Minimum Loading Point (MLP) is 10 MW			

Schedule/Price	***Qty***	***Description***
DACS (MW)	25	Day-Ahead Constrained Schedule
RTCS (MW)	20	Real-Time Constrained Schedule
RTUS (MW)	40	Real-Time Un-Constrained Schedule
RTP ($/MW)	$45	Real-Time price

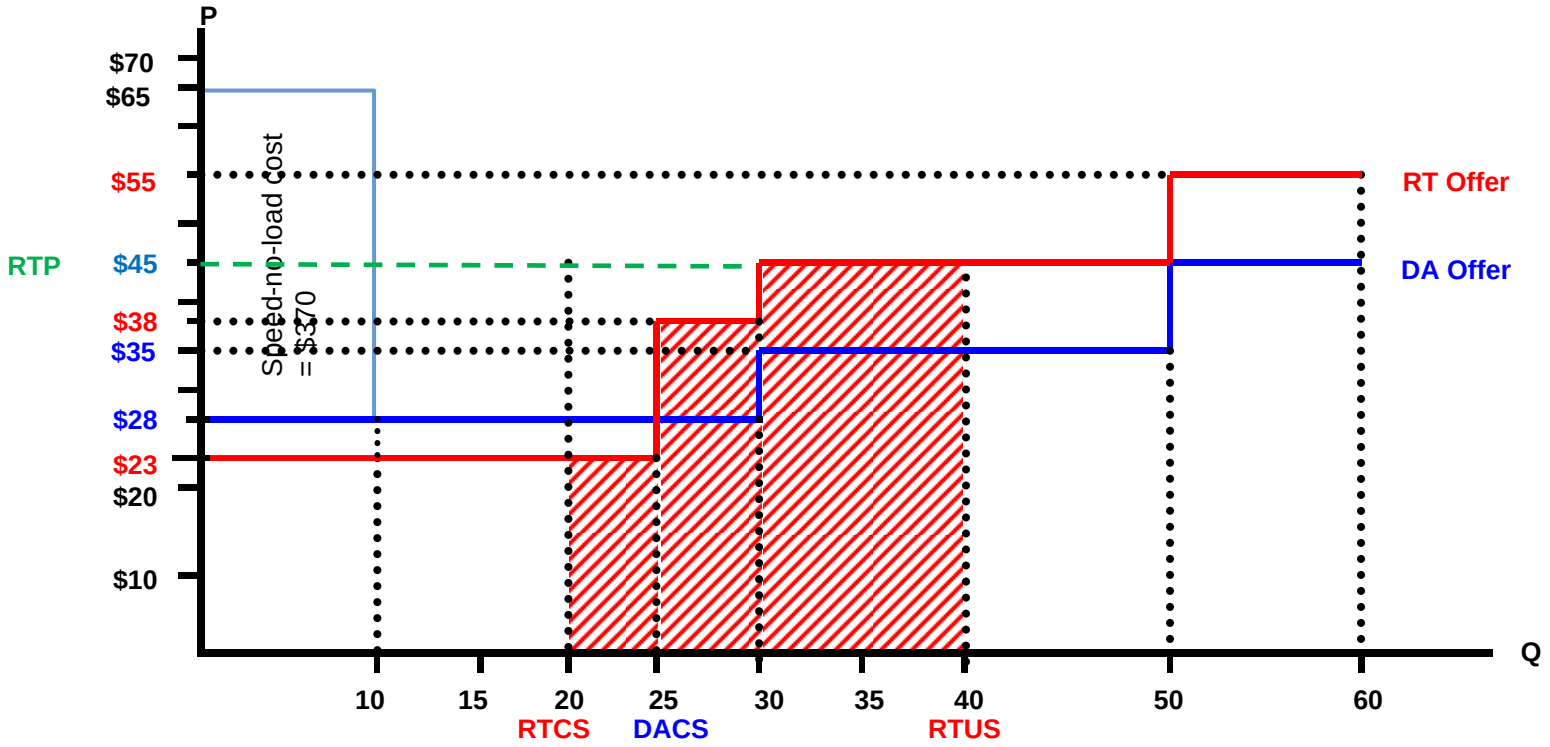
DA-PCG - Component 3
Real-Time Constrained Off CMSC – Term 1

- Term 1 = $RTP \cdot (RTUS - RTCS)$



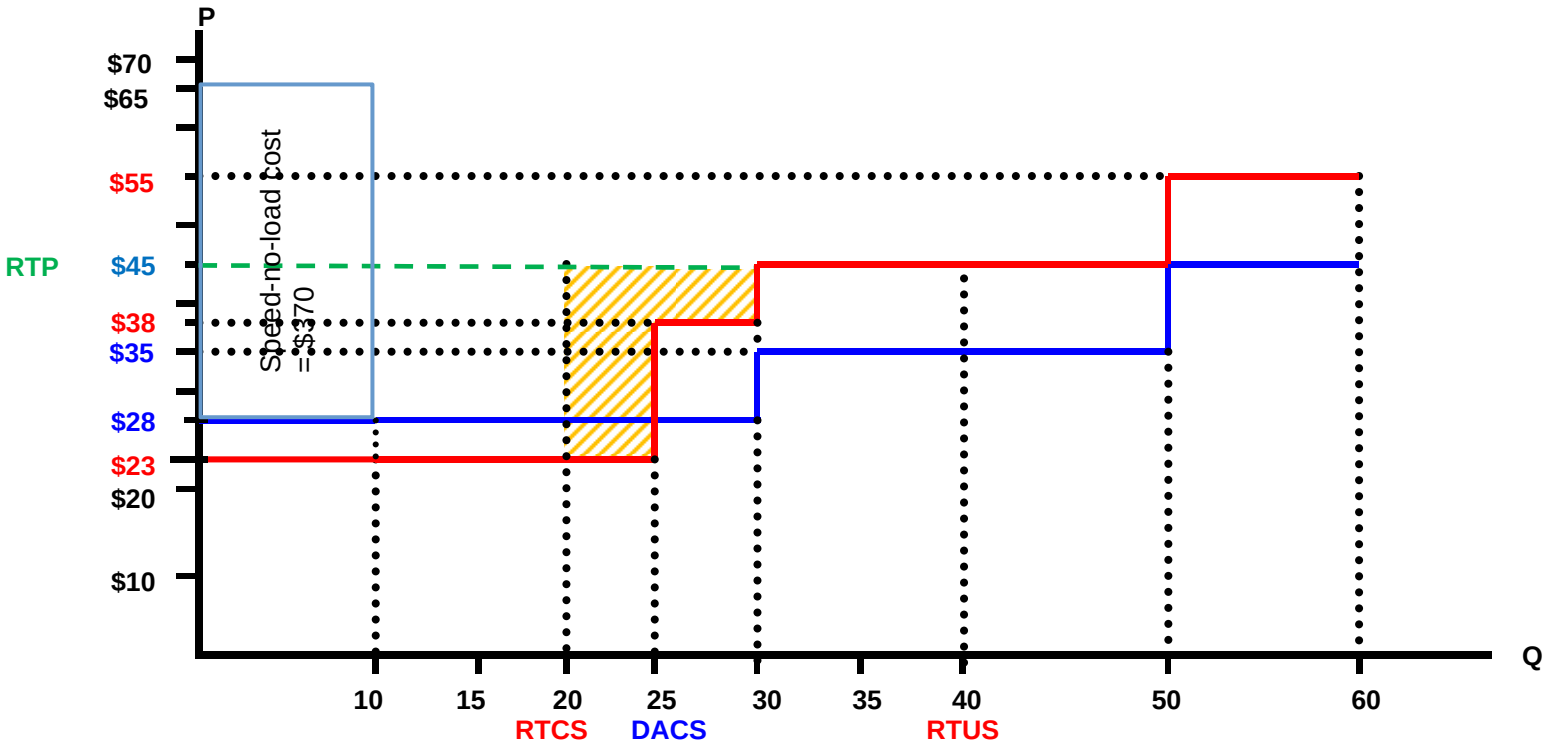
DA-PCG - Component 3
Real-Time Constrained Off CMSC – Term 2

- Term 2 = $\int_{RTCS}^{RTUS} RTO$



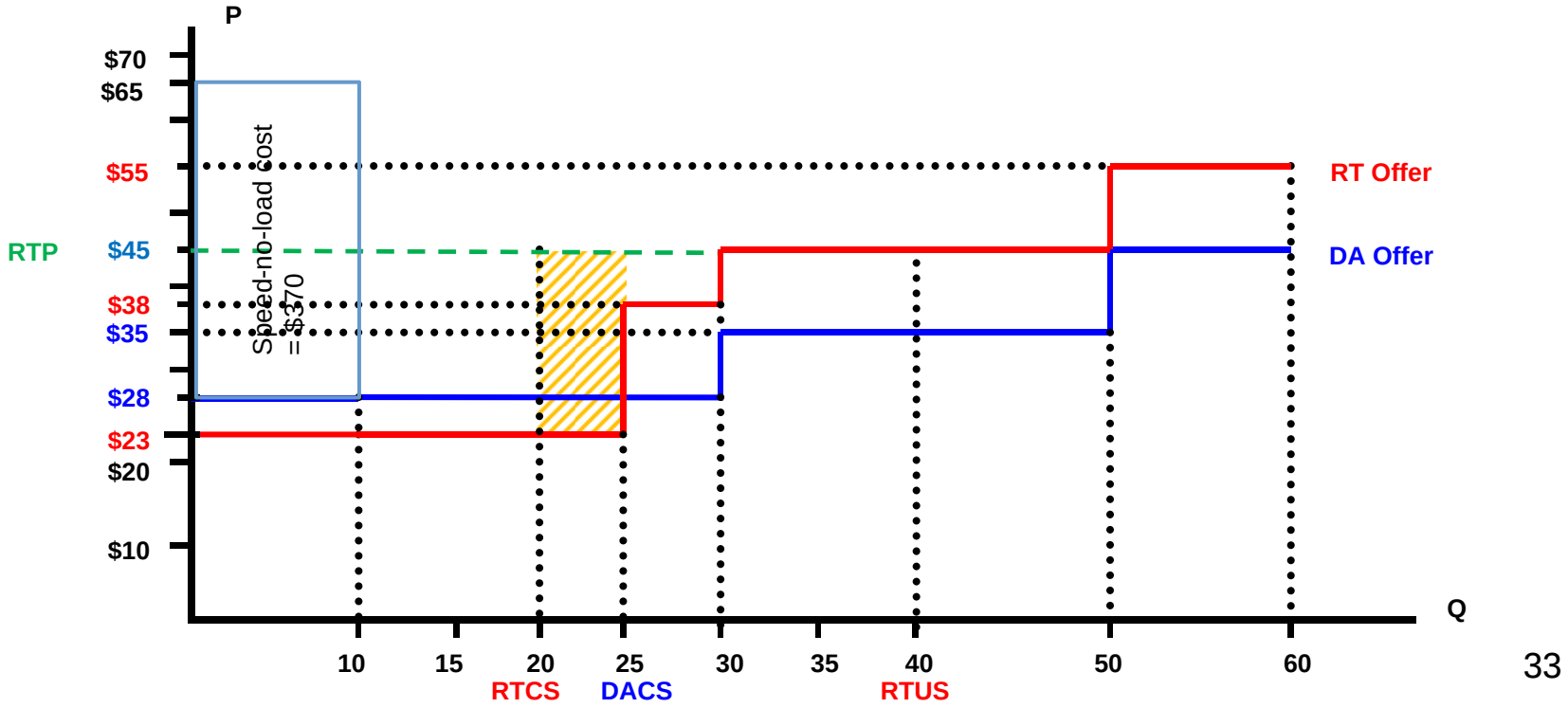
DA-PCG - Component 3
Real-Time Constrained Off CMSC

- CMSC = Term 1 – Term 2 = $RTP \cdot (RTUS - RTCS) - \int_{RTCS}^{RTUS} RTO$



DA-PCG - Component 3
Constrained Off CMSC Used in DA-PCG Calculation

- Portion of the constrained-off capacity that is included in the DACS is:
- $CMSC = RTP \cdot (DACS - RTCS) - \int_{RTCS}^{DACS} RTO$



DA-PCG Calculation
Component 3 – Constrained Off

3. Income from real-time CMSC associated with the day-ahead scheduled energy:

real-time revenue received difference of the day-ahead schedule and real-time constrained schedule } real-time revenues

minus

real-time offer for this same amount dispatched in real-time } real-time as-offered costs

DA-PCG - Component 4

- Component 4 is the net real time OR revenue earned by generator in association with all operating reserve categories, up to the capacity that was included in that generator's day-ahead constrained energy schedule
  - As-offered costs of day-ahead OR are not considered in the DA-PCG calculations
  - Net real-time OR revenue (OR Payment – OR Offers) is used in the DA-PCG calculation

DA-PCG – Component 4

Net OR Revenue

- Net OR Revenue = ($Revenue_{OR}$ - $Cost_{OR}$ + $CMSC_{OR}$)
  - $Revenue_{OR} = RTP_{OR} \times RTCS_{OR}$
  - $Cost_{OR} = \int_{0}^{RTCS_{OR}} RTO_{OR}$
  - $CMSC_{OR}$ can be either a Constrained ON or Constrained OFF payment
    - $CMSC_{OR\_ON} = \int_{RTUS_{OR}}^{RTCS_{OR}} RTO_{OR} - RTP_{OR} \cdot (RTCS_{OR} - RTUS_{OR})$
    - $CMSC_{OR\_OFF} = RTP_{OR} \cdot (RTUS_{OR} - RTCS_{OR}) - \int_{RTCS_{OR}}^{RTUS_{OR}} RTO_{OR}$
  - Where subscript OR represents the set of operating reserve categories, 10S, 10NS and 30R

DA-PCG – Component 4

Net OR Revenue (2)

- The OR net revenue can be simplified to the following:

$$- \sum \text{RTP}_{\text{OR}} \times \text{RTUS}_{\text{OR}} - \int_{0}^{RTUS_{OR}} RTO_{OR}$$

- The above equation indicates that we only need to concern ourselves with the RTUSes of each OR category to calculate the net OR revenues

DA-PCG – Component 4

Net OR Revenue (3)

- The generator's day-ahead constrained schedule in the interval will be measured against the operating reserve schedule in the interval for each of the three classes of operating reserve in the following order:
  1. 10-minute spinning (10S);
  2. 10-minute non-spinning (10NS); and
  3. 30-minute operating reserve (30R)

DA-PCG – Component 4

Net OR Revenue (4)

- The RTUSes used in the calculating Component 4 are:
  - $RTUS_{10S} = Max[0,min(DACS – RTUS_E, RTUS_{10S})]$
  - $RTUS_{10NS} = Max[0,min(DACS – RTUS_E – RTUS_{10S}, RTUS_{10NS})]$
  - $RTUS_{30R} = Max[0,min(DACS – RTUS_E – RTUS_{10S} – RTUS_{10NS}, RTUS_{30R})]$

Recap of DA-PCG Calculation Component 4

4. Net income from real-time OR for MWs up to the day-ahead schedule not dispatched in real-time:

real-time revenue received for the day-ahead schedule not dispatched in real-time — real-time revenues

minus

real-time offers this same amount not dispatched in real-time — real-time as-offered costs

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Example

DA-PCG for an Hour

Scope

- The objectives of this example is to demonstrate the following:
  - DA-PCG calculations for all four components
  - Impact of OR net revenues under various day-ahead/real-time energy/operating reserve schedules

DA-PCG Calculation
General Inputs for Example

Start Up ($)		$5,000	
Speed No Load ($/hr)		$370	
DA Incremental Energy Offers		RT Incremental Energy Offers	
Price	Qty	Price	Qty
$ 28	10	$ 23	10
$ 28	30	$ 23	30
$ 35	50	$ 30	50
$ 45	60	$ 40	60
Minimum Loading Point (MLP) is 10 MW			

DA-PCG for Example 1
Inputs

Schedule	*Qty*	*Description*
$DACS_F$ (MW)	60	Day-Ahead Constrained Schedule for Energy
$RTCS_F$ (MW)	40	Real-Time Constrained Schedule for Energy
$RTUS_F$ (MW)	50	Real-Time Un-Constrained Schedule for Energy
$RTCS_{10S}$ (MW)	10	Real-Time Constrained Schedule for 10S OR
$RTUS_{10S}$ (MW)	10	Real-Time Un-Constrained Schedule for 10S OR
$RTCS_{10NS}$ (MW)	0	Real-Time Constrained Schedule for 10S OR
$RTUS_{10NS}$ (MW)	0	Real-Time Un-Constrained Schedule for 10S OR
$RTCS_{30R}$ (MW)	0	Real-Time Constrained Schedule for 30R OR
$RTUS_{30R}$ (MW)	0	Real-Time Un-Constrained Schedule for 30R OR

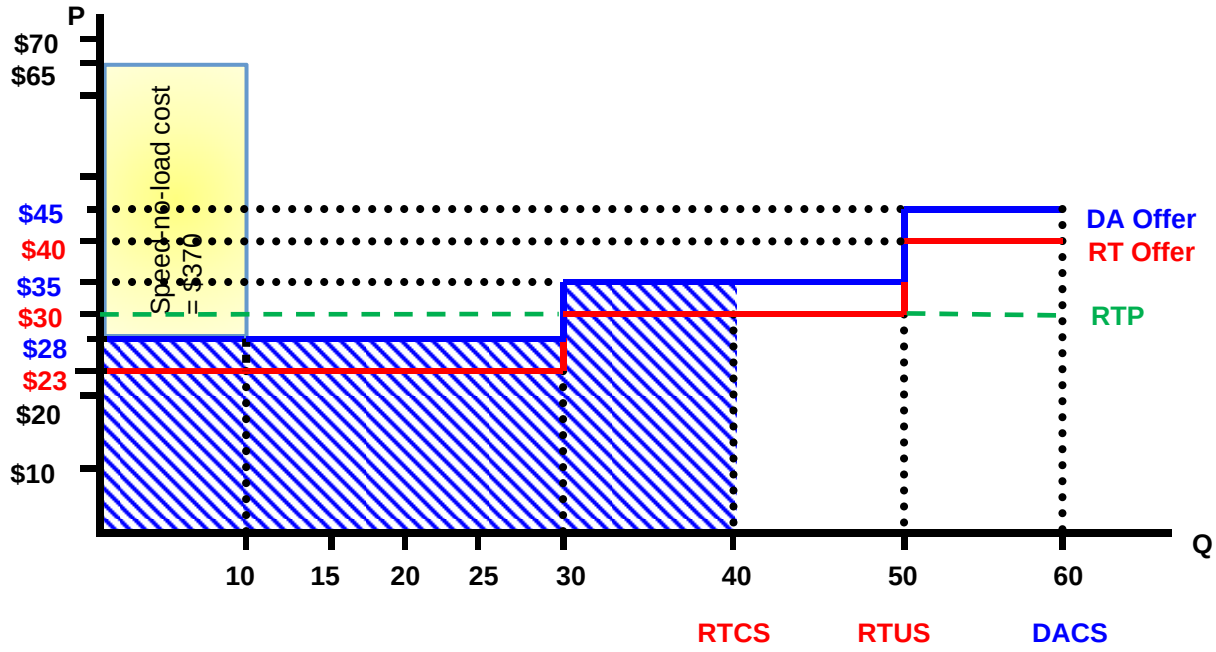
Price and Offer	*Qty*	*Description*
RTP_F ($/MW)	$30	Real-Time Energy Price
RTP_{10S} ($/MW)	$6	Real-Time 10S OR Price
RTP_{10NS} ($/MW)	N/A	Real-Time 10S OR Price
RTP_{30R} ($/MW)	N/A	Real-Time 30R OR Price
RTO_{10S} ($/MW)	$1	Real-Time 10S OR Offer Price
RTO_{10NS} ($/MW)	N/A	Real-Time 10S OR Offer Price
RTO_{30R} ($/MW)	N/A	Real-Time 30R OR Offer Price

Recap DA-PCG Component 1 Example 1

- Component 1 = $\left(\int_{0}^{\min(DACS, RTCS, AQEI)} DAO \right) - [RTP \text{ x } \min(\text{DACS}, \text{RTCS}, \text{AQEI})]$

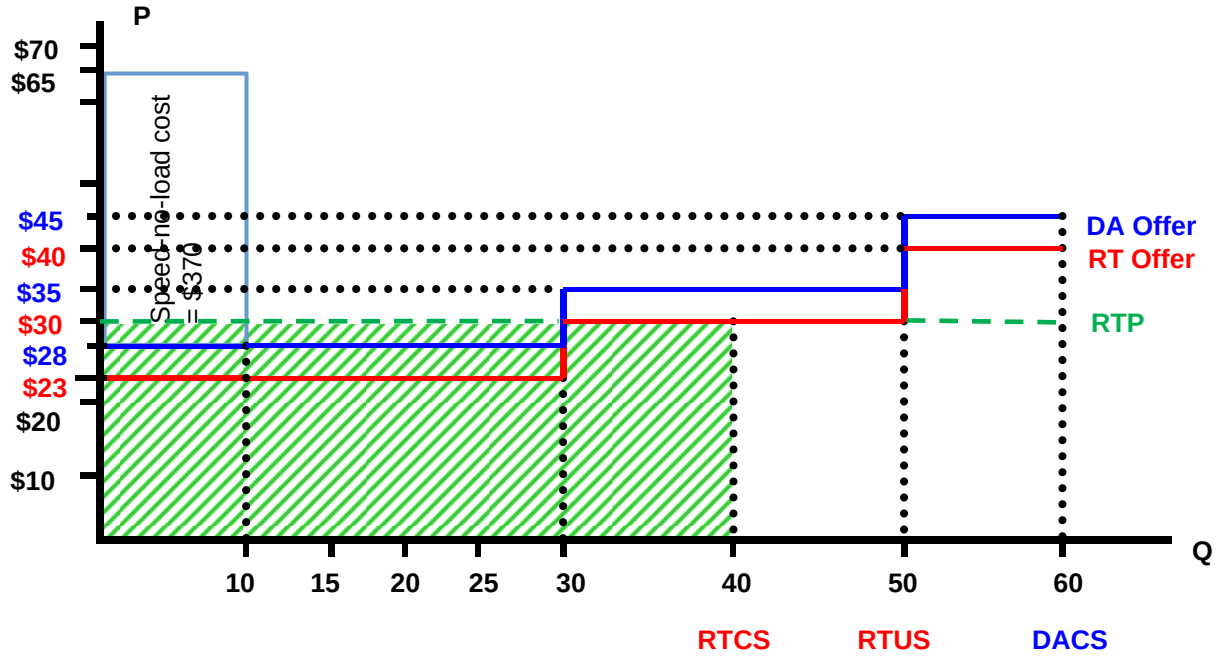
DA-PCG for Example 1
Component 1 – Term 1

- The generator's DA offer to produce the smallest of its DACS for energy, its RTCS for energy, or its actual output
- Term 1 = $\left(\int_0^{\min(DACS, RTCS, AQEI)} DAO \right)$
- Term 1 = \$370 + (\$28 x 10) + (\$28 x 20) + (\$35 x 10) = \$1560



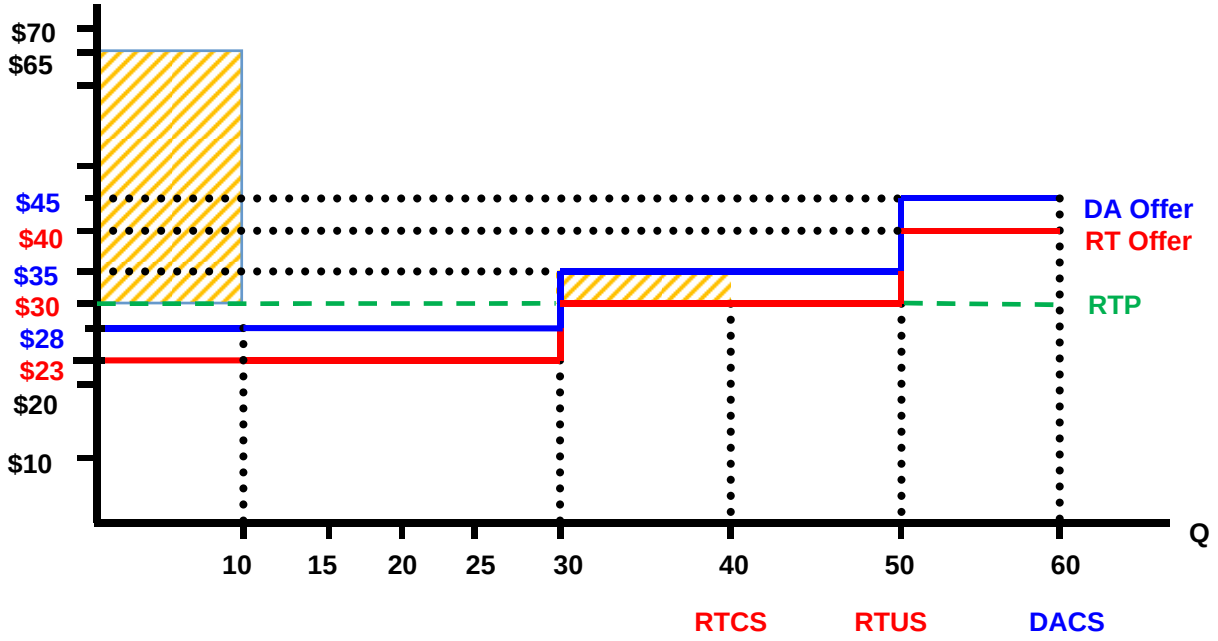
DA-PCG for Example 1
Component 1 – Term 2

- Real-time revenue the generator receives for that amount of energy
- Term 2 = [*RTP* x min(DACS, RTCS, AQEI)]
- Term 2 = $30 x 40 = $1200



DA-PCG for Example 1 Component 1

- Component 1 = $1560 - $1200 = $360

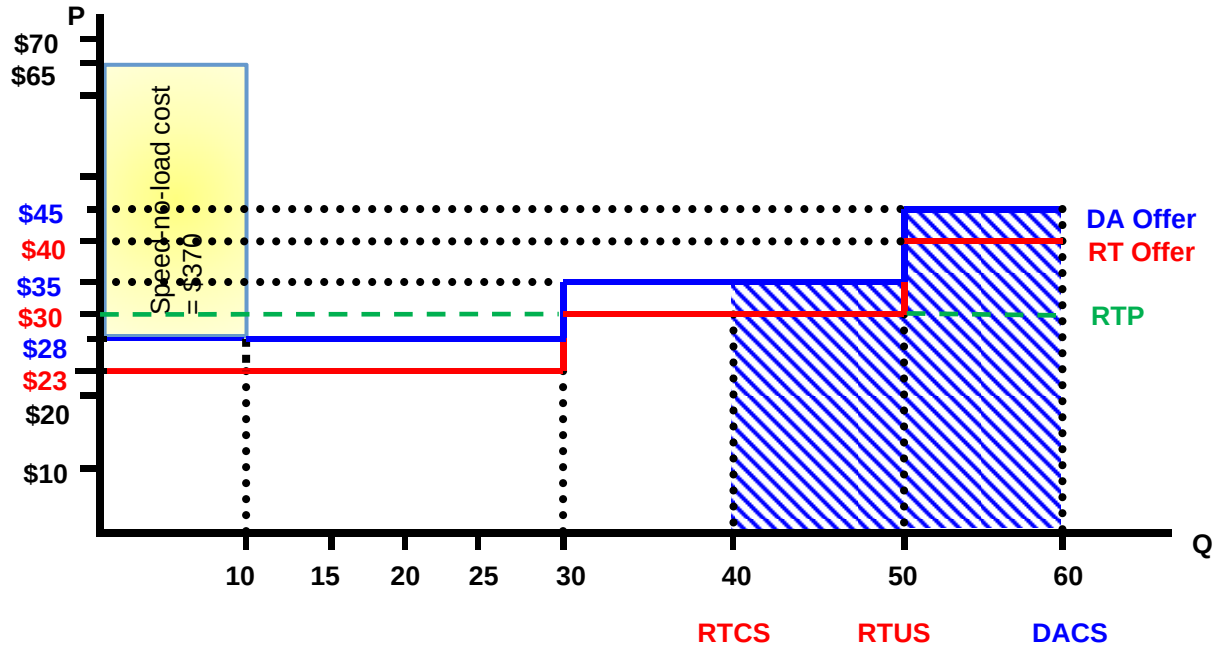


Recap DA-PCG Component 2 Example 1

- Component 2 = $\left(\int_{Min(DACS, OpCap, (\max(RTCS, AQEI))}^{Min(DACS, OpCap)} DAO \right) - \left(\int_{Min(DACS, OpCap, (\max(RTCS, AQEI))}^{Min(DACS, OpCap)} RTO \right)$

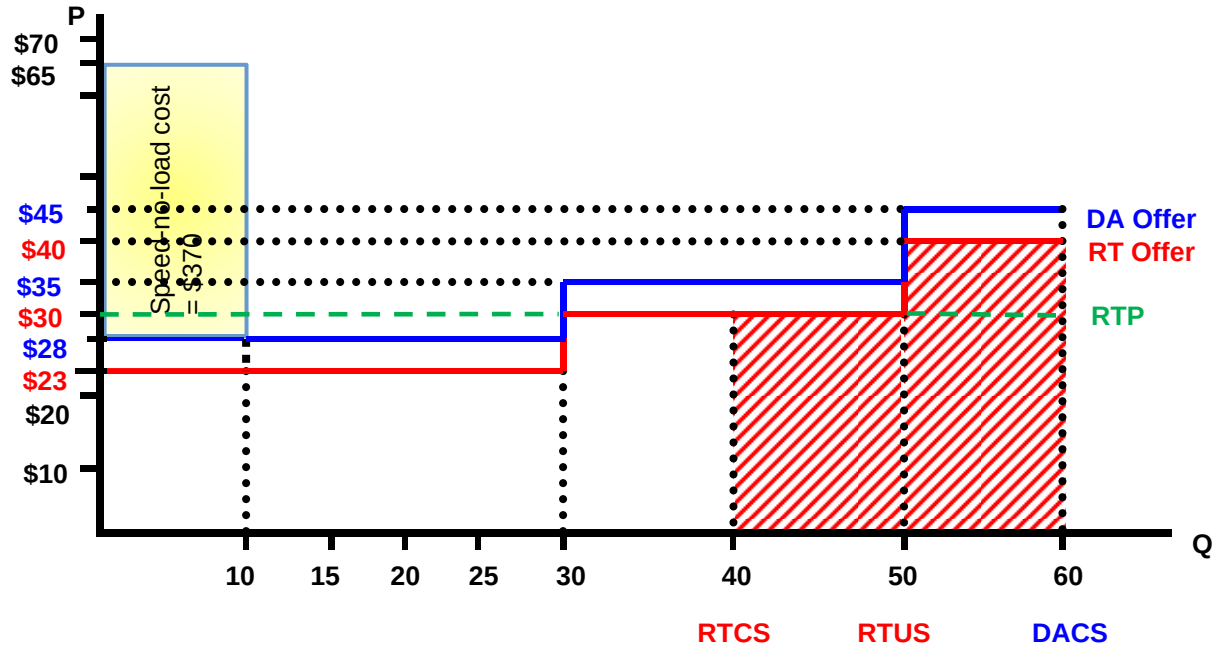
DA-PCG for Example 1 Component 2 – Term 1

- The generator's DA offer to decrease its output from its DACS to the greater of its RTCS or its AQEI (if that quantity is less than its DACS)
- Term 1 = $\left(\int_{Min(DACS, OpCap, (\max(RTCS, AQEI))}^{Min(DACS, OpCap)} DAO \right)$
- Term 1 = \$35 x10 + \$45 x 10 = \$800



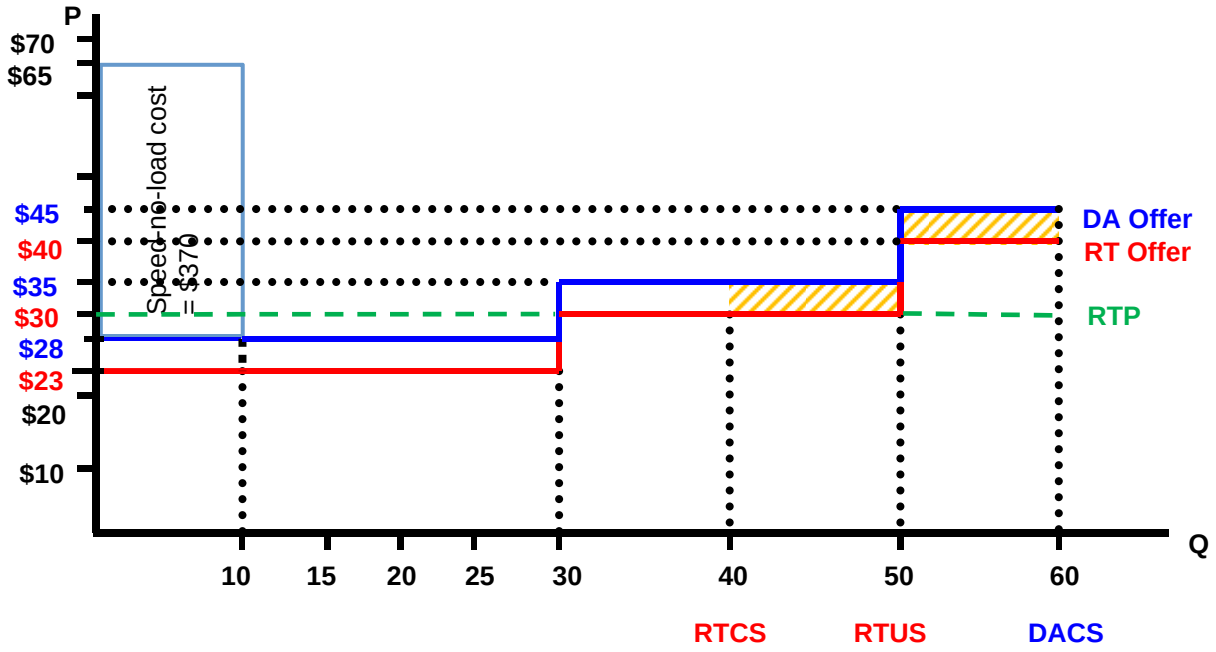
DA-PCG for Example 1 Component 2 – Term 2

- The generator's RT offer to decrease its output from its DACS to the greater of its RTCS or its AQEI (if that quantity is less than its DACS)
- Term 2 = $\left(\int_{Min(DACS, OpCap, (\max(RTCS, AQEI))}^{Min(DACS, OpCap)} RTO \right)$
- Term 2 = \$30 x 10 + \$40 x 10= \$700



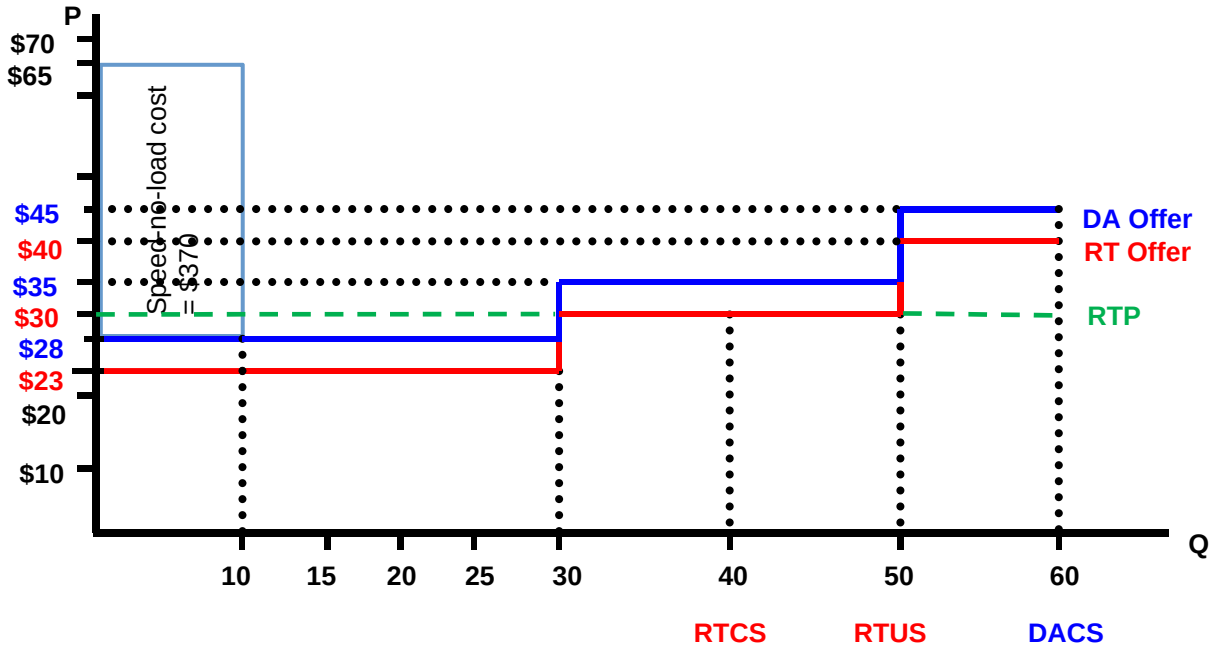
DA-PCG for Example 1 Component 2

- The generator's RT offer to decrease its output from its DACS to the greater of its RTCS or its AQEI (if that quantity is less than its DACS)
- Component 2 = $800 - $700 = $100



DA-PCG for Example 1 Component 3

- Component 3 is the CMSC payments received for capacity in the DACS
- Component 3 = Real-time CMSC = $RTP \cdot (RTUS - RTCS) - \int_{RTCS}^{RTUS} RTO$
- Component 3 = $30 x 10 – $30 x 10 = 0



DA-PCG for Example 1 Component 4

- OR net revenue = $RTP_{OR} \times RTUS_{OR} - \int_{0}^{RTUS_{OR}} RTO_{OR}$

- For this example, only one category of OR (i.e. 10S) is scheduled
  - $RTUS_{10S} = Max[0,min(DACS - RTUS_{E}, RTUS_{10S})]$
  - $RTUS_{10s} = Max[0,min(60 - 50, 10)] = 10$ MW
- OR net revenue = ($6 x 10) – ($1 x 10) = $50

DA-PCG for Example 1

- DA-PCG = Component 1 + Component 2 – Component 3 – Component 4
- DA-PCG = $360 + $100 - $0 - $50 = $410

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DA-PCG

De-commitments and Withdrawals

De-commitments and DA-PCG Calculation

- No changes from today's procedures – based on reliability needs
- For de-commitment before synchronization, the DA-PCG is not calculated
- For de-commitment after synchronization, the DA-PCG incurred prior to de-commitment is calculated
- DA fuel cost compensation continues

Withdrawals and DA-PCG Calculation

- For withdrawals before synchronization, the DA-PCG is not calculated (for both within and not within participant's control)
- For withdrawals after synchronization but prior to completion of day-ahead commitment:
  - If the withdrawal was within the participant's control, the DA-PCG will not be paid for the committed scheduled hours
  - If the withdrawal was not within the participant's control, the DA-PCG will be paid for the committed scheduled hours not withdrawn (see following example)

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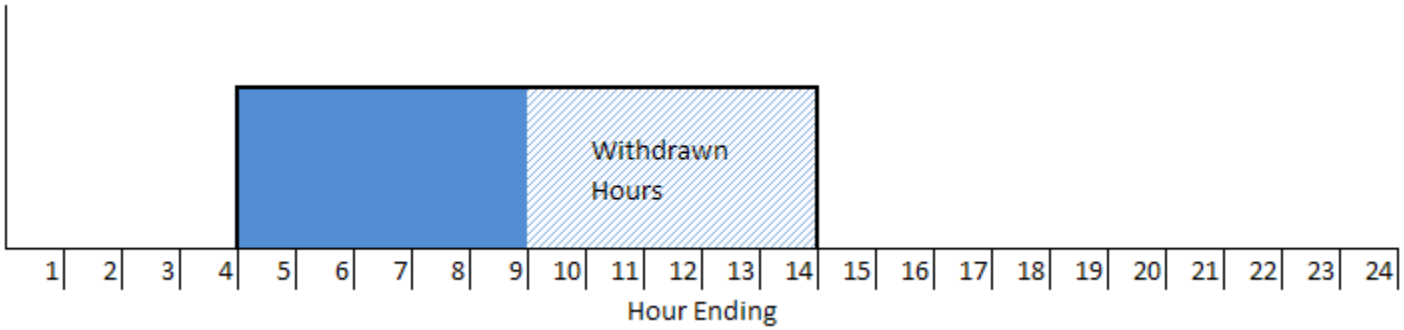
Example

Withdrawals and DA-PCG Calculation

Withdrawal Example

- In the following example the resource was committed from HE 5 – HE 14 and was withdrawn from HE 10 – HE 14
- The start-up cost = $1000



Withdrawal Example
Not Within Market Participant's Control

- Components 1 - 4 will be calculated for the committed scheduled hours not withdrawn (HE 5 – HE 9)
- The start-up cost will be paid for the entire schedule (i.e. not pro-rated) = $1000

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DA-PCG

Across the Days

Across the Days

- The EDAC engine will commit a generator towards the end of the day even if its MGBRT is in excess of the remaining hours of the day based on economics

Across the Days
Submitting Offers

- Offers for EDAC Day 1 may be submitted with escalating start-up offers at the end of the EDAC day to receive start-up and speed no-load and incremental energy to MLP within that day
  - Escalating start-up costs may factor in revenue anticipated to be received in EDAC Day 2
- Offers for EDAC Day 2 for the remaining hours from Day 1 are submitted with a least one lamination for the minimum loading point

Across the Days
Submitting Offers - Example

- Example of offers submitted across the day

EDAC DAY 1

Hour Ending	Minimum Operating Costs		
	Speed No Load Costs	Start-up Costs	Minimum Generation Block
	[$/MW]	[$]	[Hours]
HE1	500	1000	7
HE2	500	1000	7
HE3	500	1000	7
HE4	500	1000	7
HE5	500	1000	7
HE6	500	1000	7
HE7	500	1000	7
...	...	...	...
HE20	500	1575	7
HE21	500	1850	7
HE22	500	2000	7
HE23	500	2200	7
HE24	500	2310	7

EDAC DAY 2

Hour Ending	Minimum Operating Costs		
	Speed No Load Costs	Start-up Costs	Minimum Generation Block
	[$/MW]	[$]	[Hours]
HE1	0	0	7
HE2	0	0	7
HE3	0	0	7
HE4	0	0	7
HE5	500	1000	7
HE6	500	1000	7
HE7	500	1000	7
...	...	...	...
HE20	500	1000	7
HE21	500	1000	7
HE22	500	1000	7
HE23	500	1000	7
HE24	500	1000	7

Example DA-PCG Calculations

	DAY 1 PCG					
	Cost				Revenue	
Hour Ending	Start Up	Speed No Load	Incremental Energy to MLP	Incremental Energy above MLP	Up to MLP	Above MLP
HE01						
HE02						
HE03						
HE04	$ 1,000	$ 500	Y	Y	Y	Y
HE05		$ 500	Y	Y	Y	Y
HE06		$ 500	Y	Y	Y	Y
HE07		$ 500	Y	Y	Y	Y
HE08		$ 500	Y	Y	Y	Y
HE09		$ 500	Y	Y	Y	Y
HE10		$ 500	Y	Y	Y	Y
HE11		$ 500	Y	Y	Y	Y
HE12		$ 500	Y	Y	Y	Y
HE13						
HE14						
HE15						
HE16						
HE17						
HE18						
HE19						
HE20						
HE21						
HE22	$ 2,000	$ 500	Y	Y	Y	Y
HE23		$ 500	Y	Y	Y	Y
HE24		$ 500	Y	Y	Y	Y

Day 1 DA-PCG is from HE 4 - HE 12 and from HE 22 - HE 24

	DAY 2 PCG					
	Cost				Revenue	
Hour Ending	Start Up	Speed No Load	Incremental Energy to MLP	Incremental Energy above MLP	Up to MLP	Above MLP
HE01				Y		Y
HE02				Y		Y
HE03				Y		Y
HE04				Y		Y
HE05						
HE06						
HE07						
HE08						
HE09						
HE10						
HE11						
HE12						
HE13						
HE14						
HE15						
HE16	$ 1,000	$ 500	Y	Y	Y	Y
HE17		$ 500	Y	Y	Y	Y
HE18		$ 500	Y	Y	Y	Y
HE19		$ 500	Y	Y	Y	Y
HE20		$ 500	Y	Y	Y	Y
HE21		$ 500	Y	Y	Y	Y
HE22		$ 500	Y	Y	Y	Y
HE23						
HE24						

Day 2 PCG is from HE 1 - HE 4 and from HE 16 - 22

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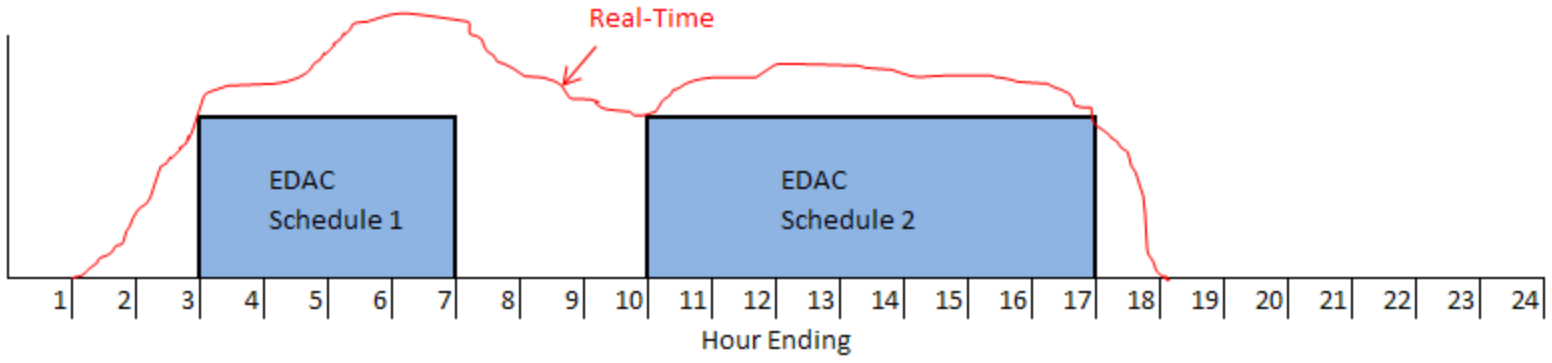
Two Schedules Starts Within a Day

Two EDAC Schedules within One Day

- Participant is scheduled by the EDAC engine to start twice in one day
- Participant continues to generate in real-time without shutting down between the two EDAC schedules



Two EDAC Schedules within One Day

- The DA-PCG calculation includes:
  - Start-up $ for both scheduled starts
  - Speed-no-load $ for all hours committed day-ahead (HE 4 – HE7 and HE 11 – HE 17)
  - Incremental energy offer for all hours committed day-ahead (HE 4 – HE7 and HE 11 – HE 17)
  - Revenues (Energy, CMSC and OR) received for all hours committed day-ahead (HE 4 – HE7 and HE 11 – HE 17)
- The DA-PCG calculation does not include revenue earned between the two EDAC schedules

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DA-PCG

Compliance Requirements

Compliance Requirements

- The participant must meet the following requirements to be paid the DA-PCG:
  - Achieve minimum loading point within three intervals of the start time of the EDAC schedule
    - Example: A resource that is scheduled to start in HE 8 is required to be at minimum loading point before the start of Interval 4 of HE 8
  - Not go below the deadband of the minimum loading point for the entire EDAC schedule
    - The deadband is the greater of 2% of the minimum loading point or 15 MW consistent with Market Rule Interpretation Bulletin IMO_MKRI_0001 (http://www.ieso.ca/imoweb/pubs/interpretBulletins/ib_IMO_MKRI_0001.pdf)

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DA-PCG

Settlement Statements and New Charge Types

Settlement Statements
New Charge Types

- The DA-PCG settlement amounts will appear on the daily settlement statements through six new charge types:

Settlement Charge Type	Settlement Timeframe
DA-PCG – Component 1	Interval
DA-PCG – Component 2	Interval
DA-PCG – Component 3	Interval
DA-PCG – Component 4	Interval
DA-PCG – Start-up Costs	Daily
DA-PCG Reversal	Daily