Amount of Capacity Qualified to Offer

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Module Objectives

Upon the completion of this module, participants should be able to:

- Name the inputs used to calculate the UCAP value for the different capacity resource types.

- Define Capacity Resource Interconnection Service (CRIS) and its relevance to UCAP.

- Explain the difference between Forced derates and Forced Outages and their significance.

- Describe the relationship between an EFORd and a derating factor.

Module Objectives – cont'd

- Describe how Import Rights are different from Unforced Capacity Deliverability Rights (UDRs).

- List the responsibilities of an ICAP Supplier.

- Calculate the Installed Capacity Equivalent (ICE) for an ICAP Supplier.

UCAP: The Amount of Capacity Suppliers are Qualified to Offer

How much can be sold?
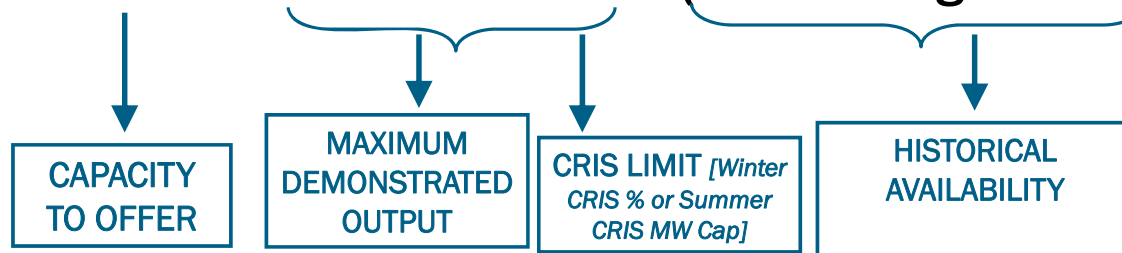
Unforced Capacity (UCAP)

- **Tariff Definition:** *The measure by which Installed Capacity Suppliers will be rated, in accordance with formulae set forth in the ISO Procedures, to quantify the extent of their contribution to satisfy the NYCA Installed Capacity Requirement, and which will be used to measure the portion of that NYCA Installed Capacity Requirement for which each LSE is responsible.*

- A generator may sell Capacity equal to its maximum demonstrated output adjusted for the CRIS limit and by its historic availability.

- UCAP is calculated each month for Resources qualified to supply capacity.

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UCAP for Resources

- In general, the following are inputs to the UCAP Calculation
  - DMNC (or equivalent)
  - Deliverability limit (CRIS)
  - Derating factor

*** Note exceptions for BTM:NG Resources identified in ICAP Manual: Section 4.15*

$$UCAP = \text{Available ICAP} \times (1 - \text{Derating Factor})$$

CAPACITY TO OFFER	MAXIMUM DEMONSTRATED OUTPUT	CRIS LIMIT [Winter CRIS % or Summer CRIS MW Cap]	HISTORICAL AVAILABILITY

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UCAP for Resources

- **Maximum Demonstrated Output**
  - Sustained maximum net output of a resource, as demonstrated by the performance of a test or through actual operation, averaged over a continuous time period

- **Based on Dependable Maximum Net Capability (DMNC) or Dependable Maximum Gross Capability (DMGC), Nameplate Rating, Performance Test or Production Data**

- **Validated every Capability Period**

- **Used as an input to the UCAP Calculation**
  - Nameplate capacity, performance test or production data may be used (subject to the specified procedures)

Let's Review

- **Why do we translate ICAP to UCAP?**

- **How is UCAP different from ICAP?**

Let's Review

Which statement most accurately describes Unforced Capacity (UCAP) for a generator?

a) A generator's demonstrated output adjusted for DMNC
b) A generator's demonstrated output adjusted for deliverability
c) A generator's demonstrated output adjusted for historical unavailability and deliverability
d) A generator's demonstrated output factoring all outages for a generator
e) None of the above

Deliverability

Capacity Resource Interconnection Service

Deliverability Limit

- **Capacity Resource Interconnection Service (CRIS)**
  - Is a threshold requirement for an internal generator or a UDR facility with a terminus in a Locality to participate in the NYISO Installed Capacity market
  - Participation up to the extent of its CRIS
  - CRIS can be obtained through
    - A transfer at the same location
    - A transfer to a different location; subject to a deliverability evaluation in a Class Year Study
    - A Class Year Study after a NYISO determination that the capacity is deliverable without a cost allocation, or after a commitment at the completion of the Class Year to pay certain allocated costs

  *Refer to OATT Attachment S

Class Year Study and CRIS Limitations

- **Class Year Deliverability Study**
  - Conducted for either:
    - New resources that request CRIS in the Interconnection Process *or*
    - Existing resources that request to increase their CRIS
  - Conducted by the NYISO to:
    - Determine the amount of capacity the new or incremental project can deliver *and*
    - To identify any costs associated with such resource's ability to acquire such CRIS
  - ICAP of each resource is limited by the resource's CRIS
    - ICAP of a resource is the lesser of CRIS or CRIS-adjusted DMNC

Available ICAP for Internal Resources

- Available ICAP $_{Summer}$ =
  Minimum (Summer CRIS MW Cap, Summer DMNC)

- Available ICAP $_{Winter}$ =
  Minimum (Winter CRIS MW Cap, Winter DMNC)

  or

  Winter CRIS % x Winter DMNC

UCAP for Resources

A generator may sell Capacity equal to its maximum demonstrated output adjusted for the deliverability limit (CRIS-adjusted DMNC) and by its historical availability.

$$UCAP = \boxed{\text{Available ICAP}} \times (1- \text{Derating Factor})$$

CAPACITY ADJUSTED FOR SEASONAL DELIVERABILITY LIMIT

MAXIMUM DEMONSTRATED OUTPUT

DELIVERABILITY LIMIT

Refer to ICAP AMS User's Guide: Section 4.13.2

Note exceptions for BTM:NG Resources identified in ICAP Manual: Section 4.15

Let's Review

What are the components for determining <u>available ICAP</u> for an internal generator?

Derating Factors

UCAP for Resources

- In general, the following are inputs to the UCAP Calculation
  - DMNC (or equivalent)
  - Deliverability Limit
  - Derating Factor

- UCAP= Available ICAP x (1- Derating Factor)

HISTORICAL AVAILABILITY

*Note exceptions for BTM:NG Resources
identified in ICAP Manual: Section 4.15*

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UCAP for Resources

- Historical Availability

- Based on derating factors
  - Calculated using Equivalent Demand Forced Outage Rate (EFORd) or equivalent (e.g. performance factor)

- Deratings are dependent on the Resource type, and accordingly are based on one or more of the following factors:
  - Forced Outages
  - Forced Derates
  - Actual availability and historical performance

Refer to the Appendix regarding Generator Outage Scheduling
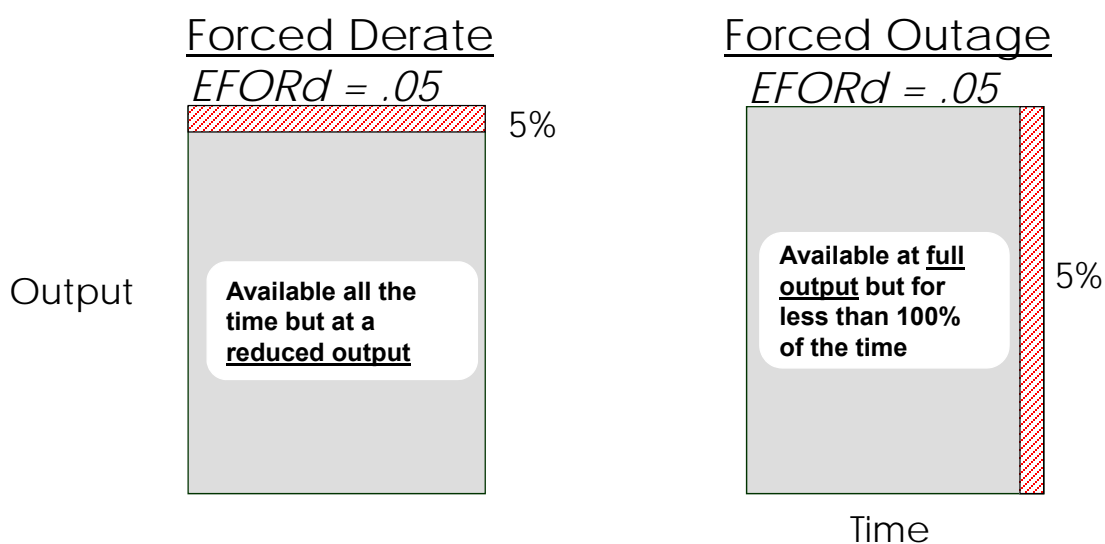
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Derating Factors & EFORd

- Equivalent Demand Forced Outage Rate (EFORd)
  - Represents the portion of time a unit is in demand, but is unavailable due to forced outages and forced derates
  - NYISO calculates EFORd for applicable generators based on GADS Data

- Forced outages and forced derates represent the times when a unit was not in a scheduled outage and not available in whole or in part

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UCAP for Resources

Forced Derate
EFORd = .05

5%

Output

> Available all the time but at a reduced output

Forced Outage
EFORd = .05

> Available at full output but for less than 100% of the time

5%

Time

Average EFORd Derating Factors

- For resource types that are derated using an EFORd, the seasonal derating factor (AEFORd) is calculated as the average of 6 rolling (12 month) EFORd values for specified months

  - AEFORd to determine Summer UCAP uses the 6 12-month periods ending in July, August, September, October, November, and December of the previous year

  - AEFORd to determine Winter UCAP uses the 6 12-month periods ending in January, February, March, April, May, and June of the current year

ICAP Manual, Section 4.5

Summer UCAP Calculation

NYISO uses an average of six 12-month EFORd calculations to establish a Summer ICAP to UCAP derating factor (Avg EFORd, AEFORd$_{summer}$)
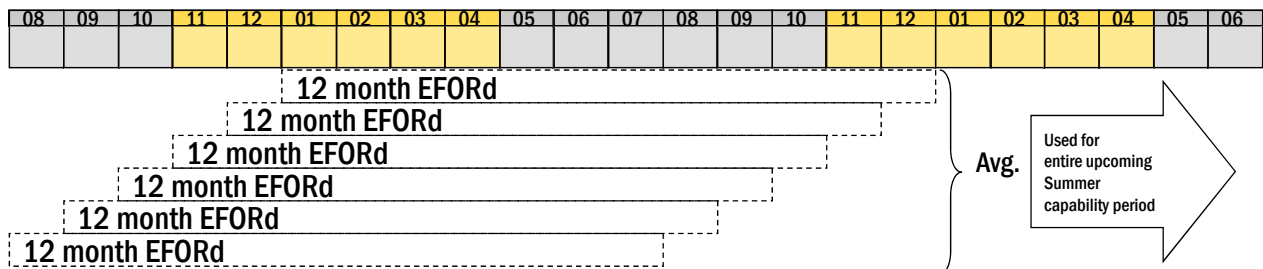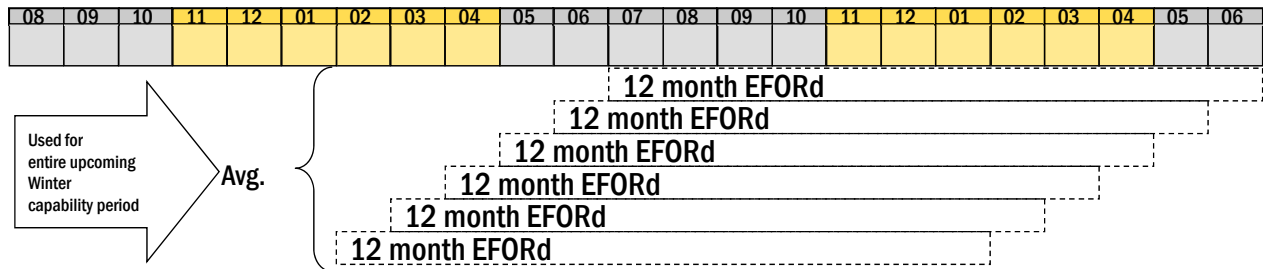
Winter UCAP Calculation

NYISO uses an average of six 12-month EFORd calculations to establish a Winter ICAP to UCAP derating factor (Avg EFORd, $AEFORd_{winter}$)

| 08 | 09 | 10 | 11 | 12 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 01 | 02 | 03 | 04 | 05 | 06 |

Used for entire upcoming Winter capability period

Avg.

12 month EFORd
12 month EFORd
12 month EFORd
12 month EFORd
12 month EFORd
12 month EFORd

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Derating Factors

Unit Type	Derating Factor
Conventional technology Generator, Energy Limited Resource (ELR), Capacity Limited Resource (CLR)	Equivalent Demand Forced Outage Rate (EFORd)

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Locational Derating Factors

- **Calculated for the following:**
  - G-J Locality – Includes only generators in Zones G-J
  - LI – Includes only generators in Zone K
  - NYC – Includes only the generators in Zone J
  - NYCA – Includes all NYS generators

Average Derating Factors		
Location	**Winter 2018-19**	**Summer 2019**
G-J Locality	6.16%	5.14%
Long Island	6.90%	6.47%
New York City	5.98%	4.09%
NYCA	7.57%	8.79%

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Let's Review

Which of the following is <u>false</u> regarding EFORds and Derating Factors?

a) Derating Factors are used to calculate UCAP for Installed Capacity Resources

b) A Derating Factor may be calculated for a resource based on something other than an EFORd.

c) EFORds are calculated for every Installed Capacity Resource

d) Derating Factors are determined for every Installed Capacity Resource

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Let's Review

What are three components of the UCAP calculation?

How often does NYISO calculate a Derating Factor for individual resources?

Let's Review

As a resource's derating factor increases, its

_____.

a) ICAP value increases
b) UCAP value increases
c) ICAP value decreases
d) UCAP value decreases
e) UCAP value remains unchanged

UCAP for Intermittent Power Resources

- Includes Wind, Solar and Landfill Gas

- New Resources:
  - UCAP = Nameplate Capacity * Applicable UCAP %

- Existing Resources:
  - UCAP = Nameplate Capacity * Production Factor

- Production Factor based on historic generating data during peak load hours of previous like capability season
  - Summer: Output during Hours 14:00-18:00 June, July, August
  - Winter: Output during Hours 16:00-20:00 Dec, Jan, Feb

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UCAP for Behind the Meter Net Generation (BTM:NG) Resources

- Consists of a Gen UCAP component and a Load UCAP component
  Where:
  Gen UCAP = Adjusted DMGC x (1-EFORd)
  Load UCAP = Adjusted Host Load x (1 - NYCA translation factor)

- Net-UCAP = Max (Min ([Gen UCAP] – [Load UCAP], Net-ICAP), 0)
  Where:
  Net-ICAP = Adjusted DMGC – Adjusted Host Load
     And: Adjusted DMGC = Min(DMGC (or DMNC), AHL + Injection Limit, AHL + CRIS)

  *ICAP Manual: Section 4.15

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UCAP for Limited Control Run-of-River Hydros (LCRoR)

- **Uses a rolling average of the hourly net energy provided by each resource**
  - Calculated separately for both Summer and Winter Capability Periods

  - Based on hourly average performance (MW) during the 20 highest NYCA integrated real time peak load hours in each of the five previous Summer or Winter Capability Periods (100 hours total)

  - Peak hours for Limited Control Run-of-River Hydro Resources are posted on NYISO website
    - ICAP Info and Announcements: http://www.nyiso.com/public/markets_operations/market_data/icap/index.jsp

ICAP Manual: Section 3.4 and MST 5.12.6.1

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UCAP for Control Area System Resources

- **No DMNC test required**
  - NYISO calculates net projected capacity based on forecast data submitted by the Control Area System Resource
    - Forecast is for the Capability Period; actual monthly MW amounts are reported

- **Net projected capacity then adjusted based on Control Area Resource and Load (CARL) data**

MST 5.12.5.2; ICAP Manual: Section 4.4.3 and Attach. J

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UCAP for Special Case Resources (SCRs)

- Categories (rated 100kW or higher)
  - Interruptible Loads
  - Qualified behind-the-meter Local Generator
  - SCR Aggregation

- Pledged amount of load reduction as increased by Transmission District loss factor (TLF) as adjusted by historical performance factor

ICAP Manual: Section 4.12
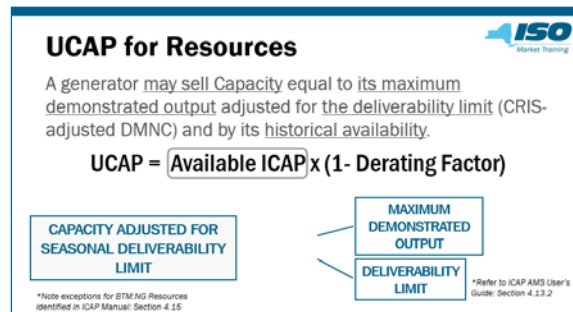

UCAP for Special Case Resources (SCR)

- SCR ICAP = Pledged amount x (1 + TLF)

- Use Performance Factor rather than derating factor
  - Two successive seasonal performance factors (during event and tests)
  - 1-hour performance test within Capability Period or 1-hour mandatory event data
  - Includes best 4 hours of each mandatory event within a Capability Period

- SCR UCAP = SCR ICAP x Applicable Performance Factor

Let's Review

Calculate the UCAP for the following resource?

- DMNC   = 100 MW
- Deliverability Limit = 100%
- Derating Factor = 0.03

UCAP for Resources

A generator may sell Capacity equal to its maximum demonstrated output adjusted for the deliverability limit (CRIS-adjusted DMNC) and by its historical availability.

$$UCAP = \boxed{Available\ ICAP} \times (1 - Derating\ Factor)$$

CAPACITY ADJUSTED FOR SEASONAL DELIVERABILITY LIMIT

MAXIMUM DEMONSTRATED OUTPUT

DELIVERABILITY LIMIT

*Note exceptions for BTM:NG Resources identified in ICAP Manual: Section 4.15

*Refer to ICAP AMS User's Guide: Section 4.13.2

Let's Review

Which of the following must be true in order for a resource's available ICAP and UCAP value to be equal?

1. The resource is 100% deliverable
2. It is historically available 100%
3. When its Derating Factor is 0%
4. When its DMNC matches its nameplate capacity

a) 1 and 2
b) 1, 2 and 3
c) 1, 2 and 4
d) 1, 3 and 4

Let's Review

To calculate the UCAP for a Special Case Resource (SCR), which of the following is used in conjunction with the SCR's ICAP value?

a) Derating Factor
b) Performance Factor
c) Production Factor
d) Translation Factor
e) Transmission Factor

External Capacity Resources

External Capacity Resources

- **External CRIS Rights: (ECRs)**
  - One time opportunity to convert Grandfathered Rights to External CRIS Rights or awarded through the Class Year process
  - Contract or Non-Contract Commitment
  - Consequences for not offering

- **Capacity associated with Existing Transmission Capacity for Native Load ("ETCNL")**

- **Import Rights**
  - First Come First Served Basis: Subject to Import Limits

*External Installed Capacity Supplier requirements listed in ICAP Manual, Section 4.9

External Capacity Resources and Import Limits

- **Import Limits are set to determine the amount of capacity that can be imported into NYCA using the "First Come First Serve" Process**

- **Limit is established <u>after considering External CRIS Rights</u>**
  - Established by NYISO
  - Based on reliability studies
  - Determined annually
  - Available Import Rights are based on Import Limits
    - Calculated for each month of upcoming Capability Period

*Import Limits: ICAP Manual, Section 4.9.6
*Import Rights: http://www.nyiso.com/public/markets_operations/market_data/icap/index.jsp

External Capacity Resources: Import Limits - Maximum provided by resources outside NYCA

(Excluding Resources Using UDRs, ETCNL, and External CRIS Rights)

2019-2020 Capability Year

Amount of External ICAP Permitted to be Allocated	Total (MW)	Grandfathered (MW)	Remaining (MW)
PJM	1112	38	1074
ISO-NE	279	0	279
Ontario	128	0	128
Quebec via Chateauguay	1114	1110 (Apr-Nov) 239 (Dec-Feb) 259 (Mar)	4 (Apr-Nov) 875 (Dec-Feb) 855 (Mar)
Quebec via Cedars	0	0	0
Total NYCA Interfaces	2633		

***Neighboring Control Area rules must provide that the resource will not be recalled or curtailed to satisfy the Control Areas own load.

External Capacity Resources and Import Limits

- ## NYISO Allocates Import Rights accordingly
  - ### First Come First Serve (FCFS) Basis
    - Import Rights from non-fully allocated External Interface are made available on a FCFS basis
- ## Capacity must be deliverable to NYCA border

- ## Capacity imports offered must be associated with the individual point ID at the time of the offer

*OATT Attachment S and ICAP Manual Section 4.9

External Rights Availability *[Import Rights]*
Summer 2019-2020 Capability <u>Period</u>

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Let's Review

When allocating Import Rights, which has first priority?

a) PJM to NYISO imports

b) ISO-NE to PJM imports

c) Import Rights are allocated on a First Come First Served (FCFS) basis

d) None of the above

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UDRs

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Unforced Capacity Deliverability Rights (UDRs)

- Rights associated with a specific controllable and schedulable transmission facility with a terminus in a Locality
    - Either from an External Control Area or a non-constrained region in NYCA
- Allows capacity external to the area to be treated as if it were physically located in the Locality

- Must have CRIS

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UDRs

Current UDRs Awarded	
Cross Sound Cable (CSC) - New England to Long Island , Zone K	330 MW
Neptune Cable – PJM to Long Island, Zone K	660 MW
Linden VFT – PJM to New York City, Zone J	315 MW
Hudson Transmission Project (HTP) – PJM to New York City, Zone J	660 MW

ICAP Manual – Section 4.9.6

UDRs

- Capacity associated with UDRs is not subject to Import Right ICAP Limits

- UDR Rights Holders can offer UCAP (must also meet the requirements to be an Installed Capacity Supplier)

- MW satisfy Locational Minimum Installed Capacity Requirement

- If UDR sinks in Load Zones G through J the resource is subject to a buyer-side mitigation examination and the UCAP may be subject to an Offer Floor
  - See separate capacity mitigation module

UDRs – EXAMPLE

UDR Line Losses:
2.86%
(equivalent to 10.3 MW)

UDR Unavailability: 2%

ISONE

Resource A
154 MW ICAP
1% Derating
Factor

Resource B
206 MW
ICAP
5% Derating
Factor

4.4 MW
UDR losses

5.9 MW UDR
losses

PJM

Scheduled Line_XYZ
331.3 MW (UCAP)

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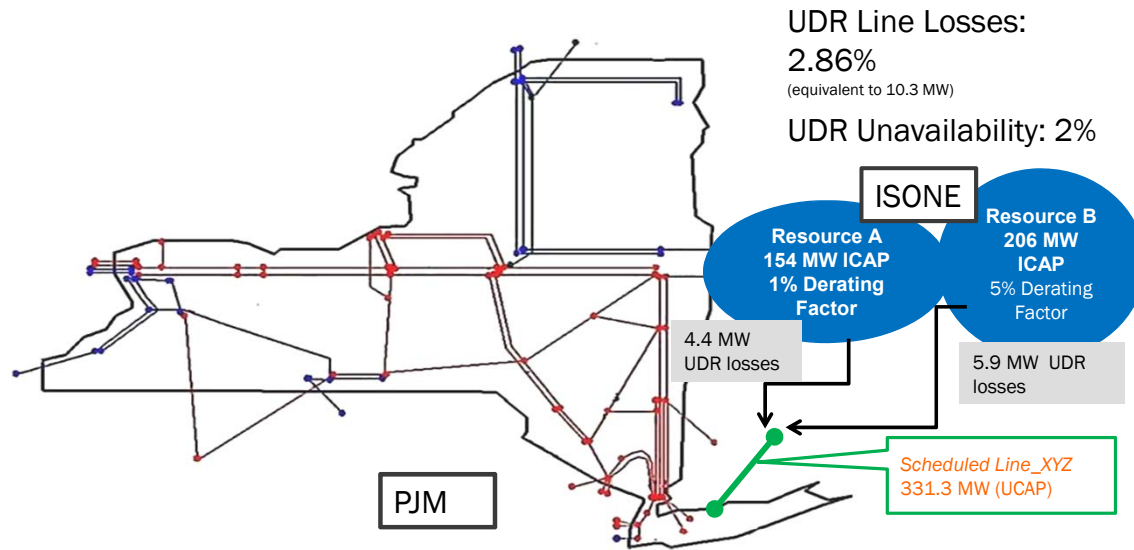
UCAP for UDR Example

- The UDR Rightsholder/ICAP Supplier designates which generating unit(s) will be used to supply capacity via the UDR.

- Each Rightsholder's UDRs are further reduced by its share of UDR Losses and by the generating unit's Derating Factor using the following UCAP Calculation.

UCAP = Truncate [(Resource ICAP - Resource portion of UDR losses) x (1 – Resource Derating Factor) x (1 – UDR Unavailability %), 1]

Calculation is truncated to one decimal place

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UCAP for UDR Example (cont'd)

- **A UDR Line XYZ from NE to LI is configured:**
  - TOTAL UDR ICAP AWARD = 360 MW
  - UDR Interface Losses = 2.86% (10.3 MW)
  - UDR Unavailability % = 2.00%

- **This UDR has Resource A and Resource B**
  - Resource A
    - Portion of UDR losses: 154 X 2.86% = 4.4
    - UCAP is calculated for UDR PTID 345 when Resource A is designated as their Behind-the-UDR generator and their share of the Interface Losses = 4.4 MW
  - Resource B
    - Portion of UDR losses: 206 X 2.86% = 5.9
    - UCAP is calculated for UDR PTID 123 when Resource B is designated as their Behind-the-UDR generator and their share of Interface Losses = 5.9 MW

UCAP for UDR Example (cont'd)

> UCAP = Truncate [(Resource ICAP - Resource portion of UDR losses) x (1 – Resource Derating Factor) x (1 – UDR Unavailability %), 1]

- **Resource A: UDR UCAP UDR PTID 345**
  $$= (154.0 - 4.4 \text{ MW}) * (1 – 0.01) * (1 - 0.02)$$
  $$= 149.6 * 0.99 * 0.98 = 145.14192 = 145.1$$

  - Resource A has 145.1 UCAP Available to Offer in LI

- **Resource B: UDR UCAP UDR PTID 123**
  $$= (206.0 – 5.9 \text{ MW}) * (1 – 0.05) * (1 - 0.02)$$
  $$= 200.1 * 0.95 * 0.98 = 186.2931 = 186.2$$

  - Resource B has 186.2 UCAP Available to Offer in LI

Let's Review

Calculate the amount of UCAP this UDR resource can offer in the auction given the following:

— UDR Resource ICAP: 10.2 MW

— ICAP Resource Losses: 0.2 MW

— ICAP Resource Derating Factor: 0.02

— UDR Unavailability: 3%

UCAP = Truncate [(Resource ICAP - Resource portion of UDR losses) x (1 – Resource Derating Factor) x (1 – UDR Unavailability %), 1]

Capacity Resource Key Responsibilities

Submit Data, Certify and DAM Obligation

ICAP Supplier Activities

- Conduct DMNC test (or equivalent) for each Capability Period
  - Option to provide actual data, rather than test data
- Schedule outages
  - Refer to Outage Scheduling Appendix, and manuals and procedures
- Submit monthly GADS Data, or equivalent
- Certify prior to ICAP Spot Market Auction
  - Allocate sales to specific resources (except certain externals already allocated)
  - Certify a bilateral transaction

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ICAP Supplier Activities – Cont'd

- If the Resource sells capacity, it has energy obligations in the Day-Ahead Market obligations
  - Generators must "bid, schedule or notify" in Day-Ahead Market (MST - Section 5.12.7)
  - Exceptions to this are SCRs, Intermittent Resources, and Municipal Utilities

Refer to MST - Section 5.12.11 and ICAP Manual - Section 4.8

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"Bid, Schedule or Notify" Obligation

- **"Bid" = Offer energy**
  - Day Ahead Market
  - Installed Capacity Equivalent (ICE)
    - *In the ICAP Automated Market System (AMS), ICE is identified as 'ICAP Sold for DAM'*

- **Schedule a Bilateral Transaction**
  - All parties must confirm the transaction

- **Notify the NYISO of any outages**
  - Unavailable due to...
    - Scheduled Maintenance (accepted by NYISO)
    - Forced Outage

"Bid, Schedule or Notify" Obligation

- **Bidding Installed Capacity Equivalent (ICE)**
  - ICE value is the generator's capacity sold adjusted for availability

$$ICE = \frac{UCAP\ Awarded}{1 - Derating\ Factor}$$

  - UCAP Awarded includes Auction MW plus Bilaterals
  - Derating Factor (for most resource types, AEFORd)

ICE Calculations for: ELRs and CLRs refer to MST Section 5.12.11 and Section 4.8.2 of ICAP manual Attachment M

"Bid, Schedule or Notify" Obligation

- ICAP = 100 MW

- Derating Factor = 0.05

- UCAP Qualified = 95 MW

- UCAP Awarded = 50 MW

$$\text{ICE} = \frac{\text{UCAP Awarded}}{1 - \text{Derating Factor}}$$

50 / (1 - .05) = 50 / (.95) = ~52.6
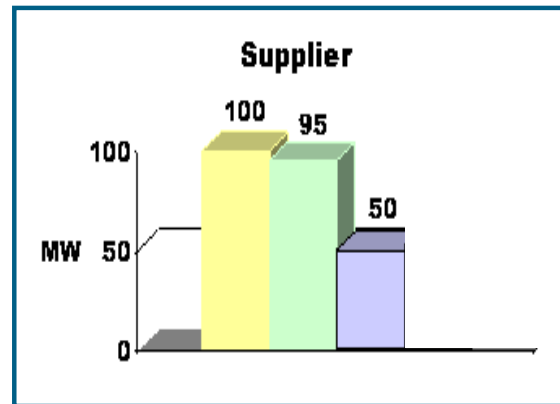
Let's Review

Resources participating in the ICAP market sell _____ in an auction.

a) the equivalent of their Unadjusted DMNC value
b) their ICAP value
c) the Installed Capacity Equivalent (ICE)
d) their UCAP value

Let's Review

Other than the different rules that apply to Resources <u>with certain characteristics</u>, which of the following activities must a generation-resource complete?

a) Conduct DMNC test (or equivalent) each capability period

b) Submit GADS Data (or equivalent) each month

c) Bid, schedule or notify NYISO

d) Certify the amount ICAP sold prior to auction

e) All of the above

Let's Review

Calculate the UCAP for a generator with the following information:

– *DMNC = 500 MW*

– *Deliverability limit = 80%*

– *Derating factor = 5.00%*

UCAP for Resources

A generator may sell Capacity equal to its maximum demonstrated output adjusted for the deliverability limit (CRIS-adjusted DMNC) and by its historical availability.

$$UCAP = \boxed{\text{Available ICAP}} \times (1 - \text{Derating Factor})$$

CAPACITY ADJUSTED FOR SEASONAL DELIVERABILITY LIMIT

MAXIMUM DEMONSTRATED OUTPUT

DELIVERABILITY LIMIT

*Note exceptions for BTM:NG Resources identified in ICAP Manual: Section 4.16

*Refer to ICAP AMS User's Guide: Section 4.13.2

Summary – Objectives

- **Name the inputs used to calculate the UCAP value for the different capacity resource types**
  - DMNC (or equivalent), CRIS, derating factor, performance factor, production factor
- **Define CRIS and its relevance to UCAP**
  - Adjusts DMNC to account for deliverability of capacity
- **Explain the difference between Forced derates and Forced Outages and their significance**
  - Forced Derate - reduced output over duration; Forced Outage - no output for a portion of time
- **Describe the relationship between an EFORd and a derating factor**
  - For certain generating types, EFORd used to determine derating factor (AEFORd)

Summary - Objectives

- **Describe how Import Rights are different from Unforced Capacity Deliverability Rights (UDRs)**
  - UDRs specific to Controllable and Scheduled Lines
  - Import Rights limited by Import Limits
- **List the responsibilities of an ICAP Supplier**
  - Resource Capability tests; GADS Data or equivalent; Certify; "bid, schedule or notify" for DAM
  - Note certain exceptions to "bid, schedule or notify" DAM obligation
- **Calculate the Installed Capacity Equivalent (ICE) for an ICAP Supplier**
  - ICE = UCAP Sold / (1 - Derating Factor)

References

- Installed Capacity Manual

- Market Services Tariff

- ICAP Automated Market System User's Guide

- Market Participants User's Guide

Appendix

Generator Outage Scheduling

Generator Outage Scheduling

- **Generator Outage Scheduling Description**
  - All <u>Generators</u> located in the NYCA or supplying ICAP to the NYCA must submit their proposed outage schedule to the NYISO
  - "Coordination of outage schedules is desirable in order to limit the severity of impact" (NPCC, 1997)
    - Impact to:
      - NYCA
      - Neighboring Control Areas

Generator Outage Scheduling

- **Generator Outage Scheduling Submittals- Four Different Types**
  - Annual Maintenance
    - Requirements
    - Methods
    - Updates
  - Impending Scheduled Outage
    - Requirements
    - Methods
  - Unscheduled and Unplanned Outages
    - Requirements
  - Notification Upon Actual Outage

Annual Maintenance Submittals

Requirements, Methods and Updates

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Annual Maintenance Submittals

- **Requirements**
  - Current year, plus two year projected schedule of annual scheduled outages
    - Submitted to NYISO by September 1st

- **Methods**
  - Manual Submittal
    - E-Mail
    - Manual entry into NYISO outage scheduler system 'iTOA'
  - Automated Submittal
    - CSV Upload

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Annual Maintenance Submittals

- **Updates to Two Year Projections**
  - Gen owner requesting outage schedule update
    - Can update as needed through iTOA

  - NYISO implementing day to day changes
    - NYISO evaluates and coordinates changes on a day-to-day basis to the approved schedules

  - Gen owner requesting cancellation of scheduled outage
    - Must submit justification for cancellation
      - Reviewed by NYISO Operations and Market Mitigation & Monitoring

Impending Scheduled Outage Submittals

Requirements and Methods

Impending Scheduled Outage Submittals

- Requirements
  - Generator owners submit confidential outage requests according to following time line:
    - 30 Days prior to TCC Month
    - Minimum 2 Day notice

  - Outage requests approved in order received as long as local TO approves and no reliability violation exists

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Impending Scheduled Outage Submittals

- Methods
  - Manual submittal
    - E-Mail
    - Phone
    - Manual entry into iTOA
  - Automated Submittal
    - CSV Upload

  ***Requests submitted to both NYISO Generation Scheduling Desk and local TO

Unscheduled & Unplanned Outage Submittals

Requirements

Unscheduled & Unplanned Outage Submittals

- Requirements
  - Unscheduled and Unplanned outages that <u>Do Not Meet</u> the scheduling notification times are considered <u>Forced Outages</u>

    - Unscheduled outage notifications are made to the *NYISO Scheduling Department* and the *Local TO*

    - In-day Forced Outage notifications are made to the *NYISO Grid Operations Department* and the *Local TO*

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Notification Upon Actual Outage

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Notification Upon Actual Outage

- **Notifying NYISO**
  - Implementing approved scheduled outages
    - Contact NYISO Generation Operator Desk
    - Await NYISO and TO authorization
  - Unscheduled generator full or partial outages
    - Contact NYISO Generation Operator Desk
    - Report reason & estimated duration
    - Await NYISO authorization
    - NYISO will coordinate new schedule with the generator operator if needed
  - Forced Full or Partial Generator Outages
    - Inform NYISO and TO as soon as possible
    - Report reason
    - Report estimated duration (and/or return to service)
    - Update MIS Bids

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Outage Scheduling References

- **Market Services Tariff**
  - Article 5

- **NPCC Document C-13**

- **NYISO Outage Scheduling Manual**

- **Outage Scheduler User Guide**

- **NYISO Generation Scheduling Desk**
  - Telephone; 518-356-6050
  - Fax; 518-356-6119
  - Email; genplan@nyiso.com

- **NYISO Installed Capacity Manual**
  - Section 4

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