

# Buyer-Side Mitigation (BSM) Renewables Exemption Study

## Methodology

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# Purpose

- We are here today to review the methodology used to determine the exempt renewable technologies.
- The list of candidate intermittent renewable technologies has not changed since the NYISO's December 7, 2020 presentation.\*

\*For more information, please see the NYISO's December 7, 2020 presentation at the following link:

[https://www.nyiso.com/documents/20142/17450815/December\\_7\\_2020\\_BSM\\_Renewable\\_Study\\_ICAPWG\\_FINAL%20\(002\).pdf/5c9d4577-9133-0a36-1f57-0d5b1a57bac0](https://www.nyiso.com/documents/20142/17450815/December_7_2020_BSM_Renewable_Study_ICAPWG_FINAL%20(002).pdf/5c9d4577-9133-0a36-1f57-0d5b1a57bac0)

# Background

Date	Working Group	Discussion Points and Links to Materials
June 2, 2020	ICAPWG/MIWG	Preliminary Identification of Candidate Intermittent Renewable Technologies <a href="https://www.nyiso.com/documents/20142/6474763/5_9_2019_Reserves_for_Resource_Flexibility_FINAL.pdf/f5b74852-2b18-9233-a8fa-bfc488ed1238">https://www.nyiso.com/documents/20142/6474763/5_9_2019_Reserves_for_Resource_Flexibility_FINAL.pdf/f5b74852-2b18-9233-a8fa-bfc488ed1238</a>
December 7, 2020	ICAPWG/MIWG	Review Total Cost Estimates <a href="https://www.nyiso.com/documents/20142/17450815/December_7_2020_BSM_Renewable_Study_ICAPWG_FINAL%20(002).pdf/5c9d4577-9133-0a36-1f57-0d5b1a57bac0">https://www.nyiso.com/documents/20142/17450815/December_7_2020_BSM_Renewable_Study_ICAPWG_FINAL%20(002).pdf/5c9d4577-9133-0a36-1f57-0d5b1a57bac0</a>

# Candidate Study Technologies

Technology	NYISO Zones			
	G	H	I	J
Ground Mounted Solar PV Project Size: 1 - 10 MW	✓	✓	✓	✓
Ground Mounted Solar PV Project Size: 10 - 50 MW	✓	✓	✓	✓
Ground Mounted Solar PV Project Size: Greater 50 MW	✓	-	-	-
Wind Onshore 2 - 4 MW WTG* Size Project Size: 2 - 50 MW	✓	-	-	-
Wind Onshore 2 - 4 MW WTG* Size Project Size: 50 - 200 MW	✓	-	-	-
Wind Offshore 6 - 12.5 MW WTG* Size Project Size: up to 400 MW	-	-	-	✓
Wind Offshore 6 - 12.5 MW WTG* Size Project Size: 400 - 800 MW	-	-	-	✓
Run of River Hydro Project Size: 1 - 10 MW	✓	-	-	-
Landfill Gas (LFG) Project Size: 2 - 10 MW	✓	✓	✓	✓

\* Note: WTG = Wind Turbine Generator

# Tariff Requirements

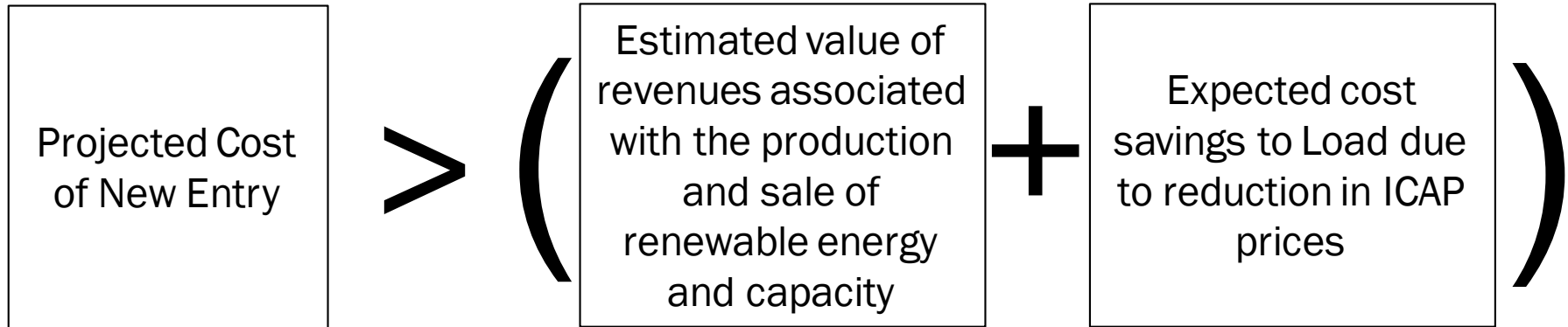
- **In each ICAP Demand Curve Reset Filing Year, the ISO must conduct a periodic review to determine the technology types that should be Exempt Renewable Technologies (MST 23.4.5.7.13.2.1)**
  - The ISO will determine, for each Mitigated Capacity Zone, which candidate intermittent renewable technologies have (a) high development costs and (b) a low capacity factor, such that considering (a) and (b) there is limited or no incentive and ability to develop the candidate intermittent renewable technology in order to artificially suppress capacity prices (MST 23.4.5.7.13.2.2)
  - The ISO's periodic review shall provide for: (a) the ISO's preliminary identification of candidate intermittent renewable technologies for stakeholder review and comment (MST 23.4.5.7.13.2.3), which was accomplished with the June 2, 2020 presentation to stakeholders.
  - The ISO will then issue a draft list of recommended Exempt Renewable Technologies, and the basis for the recommendation, for stakeholder and Market Monitoring Unit review (MST 23.4.5.7.13.2.3).
    - This presentation will occur after FERC acceptance of the 2021 to 2025 ICAP Demand Curves and annual update methodology.
  - After FERC acceptance of the ICAP Demand Curves and annual update methodology, the NYISO has 60 days to file with FERC the results of its Exempt Renewable Technology periodic review and determination (23.4.5.7.13.2.4).

# Study Methodology

# Study Purpose

- The Net Present Value (NPV) of the revenues and costs associated with each Candidate Technology are analyzed to determine if the projected cost of new entry is greater than the sum of the estimated revenues to the resource and the expected cost savings to a Load Serving Entity (LSE) financing the project.<sup>1</sup>
  - Candidate technologies are intermittent, renewable, and commercially viable in the wholesale market. These technologies may have high development costs and low capacity factors such that they have limited or no incentive and ability to artificially suppress capacity prices.

Candidate Technology will be exempt if:



<sup>1</sup>The 2016 BSM Renewables Exemption Study filing is included in FERC Docket No. ER16-1404 and at the following link:  
[https://nyisoviewer.etariff.biz/ViewerDocLibrary//Filing/Filing1131/Attachments/Filing\\_1131.zip](https://nyisoviewer.etariff.biz/ViewerDocLibrary//Filing/Filing1131/Attachments/Filing_1131.zip)



# Cost Inputs

Input	Source
Installed Project Capital Costs Fixed Operations and Maintenance (O&M) Costs	Sargent & Lundy Report, as discussed at the December 7, 2020 ICAPWG meeting <sup>1</sup>
Cost of Debt Return on Equity Percent of Financing from Debt Percent of financing from Equity	Recent utility annual reports <sup>2</sup>
Interest Rate (Nominal) Inflation Composite Tax Rate	ICAP Demand Curve Reset assumptions by Zone
Investment Horizon Depreciation Type Tax Depreciation Schedule	Resource-specific characteristics, with a Modified Accelerated Cost Recovery System (MACRS) depreciation schedule

<sup>1</sup> Link to Sargent & Lundy Report: [https://www.nyiso.com/documents/20142/17450815/NYISO\\_Renewable%20Technology%20Costs\\_26June2020public.pdf/25661725-15bd-33e2-1fdb-d883f9f82963](https://www.nyiso.com/documents/20142/17450815/NYISO_Renewable%20Technology%20Costs_26June2020public.pdf/25661725-15bd-33e2-1fdb-d883f9f82963)

<sup>2</sup> ConEd and Orange and Rockland: <https://investor.conedison.com/static-files/3b97b264-e5de-4ac3-95a4-57b19a9e0109>

Central Hudson: <http://www.chenergygroup.com/financialinformation/Central%20Hudson%202019%20Annual%20Report%20-%20FINAL.pdf>

NYSEG: [https://s24.q4cdn.com/489945429/files/doc\\_downloads/supplemental\\_financial/2019/FY-2019-Combined-Subsidiary-Financials.pdf](https://s24.q4cdn.com/489945429/files/doc_downloads/supplemental_financial/2019/FY-2019-Combined-Subsidiary-Financials.pdf)

# Revenue Inputs

Input	Source
Energy Market Factor	Estimated based on: <ul style="list-style-type: none"> <li>• CARIS production shapes (Solar, Land-Based Wind, Offshore Wind)</li> <li>• Resource production data (Run of River Hydro and Landfill Gas)</li> </ul>
Capacity Market Factor	Class average derating factor, or Installed Capacity Manual
Energy Market Revenues	Estimated based on: <ul style="list-style-type: none"> <li>• Prices in the ICAP DCR timeframe (9/1/2017 to 8/31/2020)</li> <li>• CARIS production shapes (Solar, Land-Based Wind, Offshore Wind)</li> <li>• Resource production data (Run of River Hydro and Landfill Gas)</li> </ul>
Capacity Market Revenues	Most recent Summer and Winter ICAP Market-Clearing Prices for the Spot and Monthly Auctions
Production Tax Credit for Wind Investment Tax Credit for Solar Renewable Energy Credit (REC)	Based on publically available data from various sources

# Excluded Costs

## ■ Excluded Costs:

- Property taxes, insurance, site development and site leasing costs, since these are case specific, and thus calculated separately
- Interconnection costs or costs of system facilities upgrades, which vary by project to project, and are location specific

## ■ Excluding these costs makes the analysis more conservative

- Including these costs would increase the estimated costs of new entry and, therefore, decrease expected NPV of a project.
  - A project that has limited or no incentive and ability to artificially suppress capacity prices without these costs would have even less incentive and ability to artificially suppress capacity prices with the costs.

# Five Year Return to Historical Level of Excess

- **The NYISO previously determined that a five year return to the historical level of excess after resource entry was a reasonable assumption, and this assumption was used for the previous BSM Renewables Exemption Study.**
  - The NYISO intends to continue with this assumption for the current BSM Renewables Exemption Study.
    - However, the NYISO is open to stakeholder feedback as to how an alternative return to the historical level of excess assumption could be determined and applied to this study before the filing deadline (estimated in March).

# Timeline

# Next Steps

The NYISO is currently targeting the following dates:

- **January/ Early February 2021**

- The NYISO will use the candidate intermittent renewable technology cost information, along with the Capacity Market Demand Curves, to determine the candidate technologies exempt from buyer-side mitigation.

- **Late February/ Early March 2021**

- After FERC issuance of an order accepting the 2021 to 2025 ICAP Demand Curves and annual update methodology, the NYISO will provide the draft Exempt Renewable Technology study for review and comment by stakeholders and the MMU.

- **March 2021**

- Per the Tariff, on or before the 60<sup>th</sup> day following the FERC issuance of an order accepting ICAP Demand Curves based on the ICAP Demand Curve periodic review, the ISO shall file with the Commission the results of its Exempt Renewable Technology periodic review and determination.

# The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefits to consumers by:

- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policy makers, stakeholders and investors in the power system



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