# Repowering

## Findings and Recommendations


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# Agenda

- **Recap of this initiative**
- **Economics and Existing Market Rules**
- **Preliminary Market Design**
- **Next Steps**
  - **Further Work**

# Recap

- **A growing proportion of NYC generators count themselves among the oldest of their peers**
  - Statistics show that fleet turnover has been particularly slow in NYC relative to plants nationwide.
  - As generators age, the likelihood that they cease operations increases.
  - It is expected that as aging in-city generators cease operations, some portion will eventually need to be repowered.
- **The NYISO has initiated discussions with stakeholders to determine:**
  1. Whether the exiting market rules are sufficient to facilitate the repowering and replacement of existing generating units, or
  2. Whether new rules should be considered to specifically address the concerns with repowering projects and to encourage private investment in the same,
  3. What a repowering-specific exemption to the BSM rules that is compatible with market-based principles, and does not seek to support or encourage subsidized new entry, might look like.

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# Economics & Existing Market Rules

- **Unique hurdles facing new entrants in NYC raise concerns about barriers to entry**
  - NYC looks more like a "Zero-sum" market: Limited interconnection points (and other unique barriers to entry) inhibit the ability of new 'greenfield' projects to displace incumbent generators.
  - The inflated value of interconnection points, CRIS rights, and real property are a key indicator of the existence of barriers to entry.
- **If barriers to entry are present, upward pressure on capacity prices does not necessarily favor repowering over retaining an existing facility**
  - Barriers to entry can reduce or inhibit the competitive pressures that would normally come from potential new entrants.
  - Absent the risk of displacement from new entrants, higher capacity prices affect the economics of both repowering and continuing operation, and do not affect their relative profitability.

# Economics & Existing Market Rules

- **The NYISO's capacity market is designed to achieve its reliability objects by attracting new resources and by retaining existing resources**
  - Economically efficient operation of this style of market relies on the ability of new, economic entrants to displace incumbents, and on the competitive response of incumbents seeking to invest in and improve their existing assets.
  - This competition is what drives down consumer costs, with savings resulting from both the construction of less expensive new units, and the improvement of existing units.

# Economics & Existing Market Rules

- **Barriers to entry inhibit efficient competition, protect incumbents, and may have a distortive effect on prices.**
  - Individual interconnection points, CRIS rights, and real property have developed intrinsic value due to their scarcity. Incumbents realize this value.
  - Without competitive pressures from new entrants, incumbents have reduced incentives to improve their cost-competitiveness, and significantly reduced incentives to invest in new projects.
  - Over time, this lack of competition can result in stagnation and higher prices relative to areas where competition has continued to drive down prices.
  - Barriers to entry appear to be structural, rather than strategic:
    - An example of a strategic barrier to entry might include the refusal of an incumbent to sell real property on which an interconnection point with a TO is located, to a prospective developer. Such an act could be construed as non-competitive behavior.

# Conclusions

1. Existing market rules may not be sufficient to facilitate the repowering and replacement of existing generating units.
2. New rules should be considered to improve market efficiency in recognition of the effects of barriers to entry in NYC, including encouraging and facilitating private investment in the repowering and replacement of existing assets.

# Repowering Exemption for BSM

- **One approach to encouraging market investment in repowering and replacement projects might be to develop a carefully tailored Repowering Exemption for BSM.**
  - The NYISO has presented such an approach, based on scarcity of exemption MW, devised to encourage private investors to secure exemption MW before the entry of potential subsidized entrants.
  - This approach seeks to augment the competitive pressures experienced by incumbents through the granting of BSM exemptions to subsidized repowering projects.
  - BSM Repowering exemptions would be granted only when insufficient new capacity has been built by the time existing capacity resources reach a predetermined age.

# Repowering Exemption for BSM

- **Out-of-market interventions generally provide for above-market compensation to one or more projects.**
- **Aside from preventing or discouraging them entirely through the imposition of Offer Floors, distortions from out-of-market interventions can be reduced by:**
  - Placing clear limits on the size and scope of interventions that are determined by the minimum levels necessary to meet objectives
  - Ensuring that interventions are predictable and announced well in advance
  - Requiring competitive, open and non-discriminatory procurement strategies

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# Repowering Exemption for BSM

- **In some limited circumstances, a BSM Offer Floor exemption can be designed around these principles without compromising market integrity**
  - The NYISO's analysis has not eliminated the possibility that an approach to a Repowering Exemption as described in this presentation may need additional protections to prevent subsidized uneconomic entry from suppressing market prices.
  - Additional protections might include an economic test for the repowered or replaced facility, or restricting the exemption MW to some percentage of the replaced MW.

# Preliminary Market Design

# Proposed Repowering Exemption

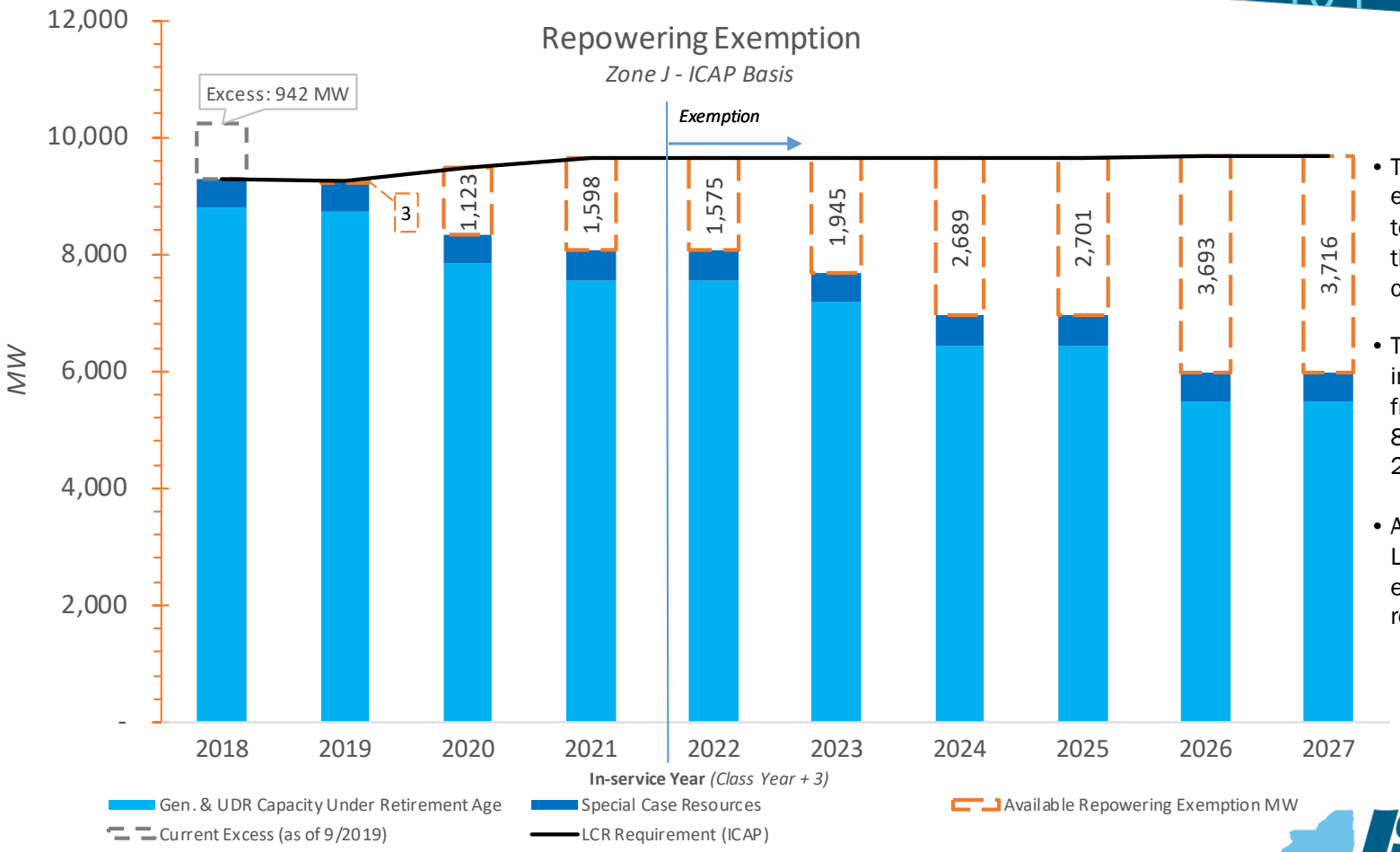
- **Some amount ($x$) of generation past the 95th percentile "retirement age" is relied upon in order to meet Locational Minimum Installed Capacity Requirement (LCR) in NYC**
  - "Retirement age" would be based on an predetermined, publically available statistic.
  - Barring new entry or repowering, this number will increase over the next decade, and then plateau
  - The 95$^{th}$ percentile provides a transparent and predictable threshold that works well with the proposed structure

# Exemption MW

- **The NYISO proposes to make that amount (x ) of MW available for repowering exemptions in each Class Year**
  - This would be, in effect, an allowance of exemption MW for repowering projects
  - The available MW would be reduced by MW of other projects receiving any BSM exemption (see next slide)
  - Unused exemption MW would be carried over to the next Class Year
- **An alternative approach would be to simply make some amount *(x)* of exemption MW available periodically.**
  - Rather than being based on statistics, this amount and the frequency that repowering exemptions become available could be calibrated to maximize the incentive an incumbent has to secure a repowering project *now*.
  - If a repowering project missed its opportunity in one CY, it would need to wait a non-negligible period of time before it became available again – effectively placing an appreciable amount of option value associated with the option to repower "at risk" should it not exercise the opportunity to repower immediately.

# Exemption MW

- **Repowering exemptions would be available only after considering all other exemption determinations in a Class Year (CEE, Renewable, Self-Supply, Part A and Part B)**
  - The requestor would need to identify the unit it was replacing or repowering. (A replaced unit would need to retire; the CRIS could not be "duplicate" with the CRIS of the unit it was replacing)
- **Multiple repowering projects in a Class Year**
  - Exemption MW would be granted to the most economic projects first
  - No partial exemptions would be granted – the current Class Year rule process allows revision of amount of CRIS requested




- The proposed repowering exemption would allow up to the number of MW in the orange box in the corresponding CY
- This graph assumes an increase in NYC LCRs from today's 80.5% to 83% in 2020 and 85% in 2021.
- Absent the increased NYC LCR, available repowering exemptions would be reduced by ~600 MW

DRAFT – FOR DISCUSSION PURPOSES ONLY

# Next Steps

# Further work

- **The NYISO will consider stakeholder input provided at today's meeting and any further stakeholder input received**
- **Additional Market Rules to encourage Repowering projects**
  - The NYISO will continue discussions with stakeholders about what additional market rules can be designed to specifically address the concerns with replacement generation projects.
  - This includes but is not limited to a repowering-specific exemption for BSM.
  - The NYISO will seek to determine what can be done to mitigate the potential impact of barriers to entry on the competitiveness of the NYC market, pricing outcomes, and consumer costs.
  - The NYISO will continue work to determine to what extent supplementary protections are necessary in its draft Repowering Exemption proposal in order to prevent the uneconomic suppression of market prices.

# Questions?

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# Feedback?

- Email additional feedback to: lseirup@nyiso.com, nguo@nyiso.com and deckels@nyiso.com