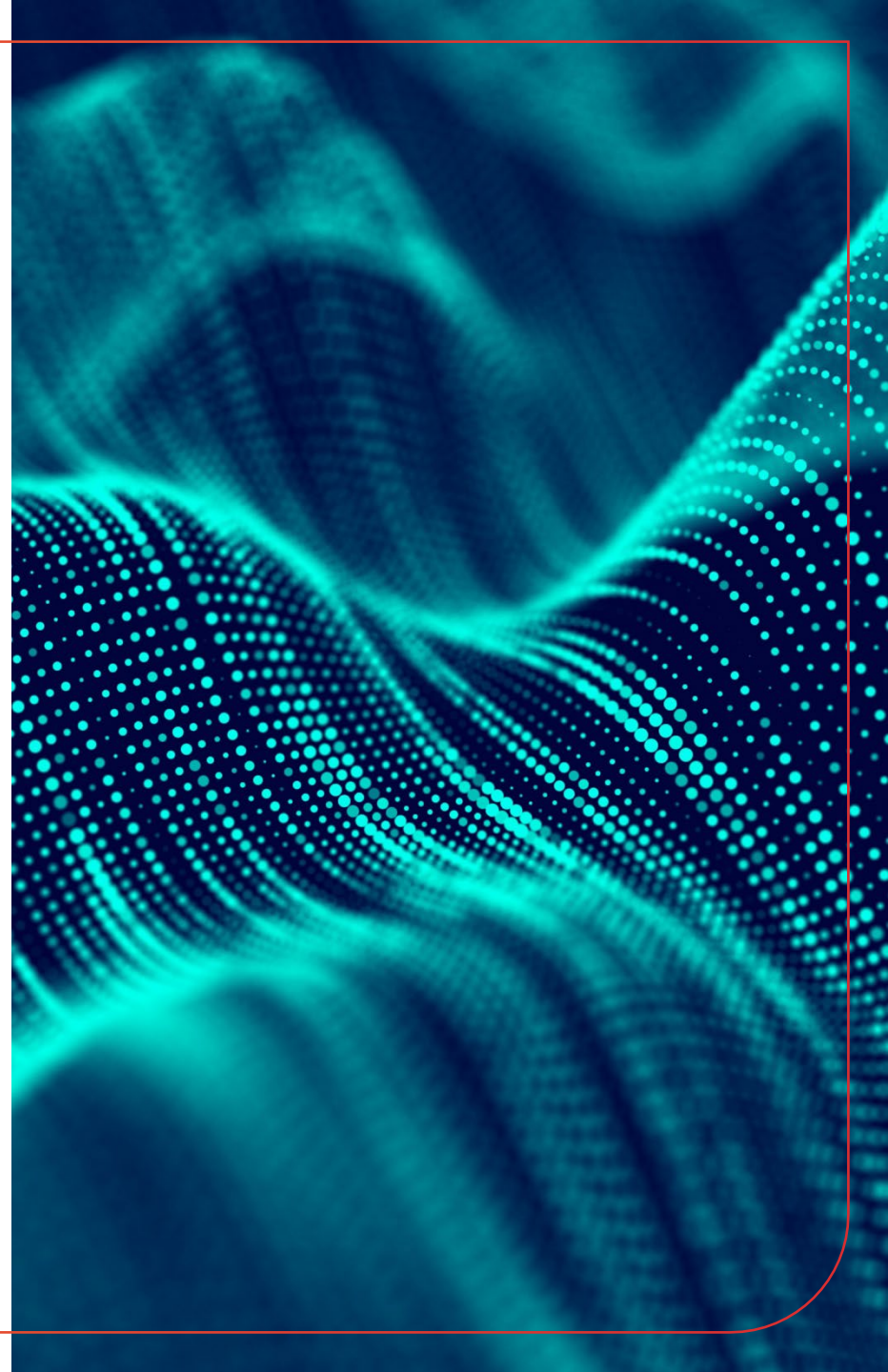
NYISO 2025-2029 ICAP Demand Curve Reset

ICAP Working Group Meeting

September 26, 2023



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Proposed Technology Screening Criteria

- Propose the following initial screening criteria that are consistent with the 2021-2025 Installed Capacity Demand Curve reset (DCR):
  - Standard resource technology – available to most market participants
  - Proven technology – operating experience at a utility power plant
  - Unit characteristics that can be economically dispatched
  - Ability to cycle and provide peaking service
  - Can be practically constructed in a particular location
  - Can be designed to meet environmental laws, regulations, and other operating requirements

Burns & McDonnell Role in DCR Process

Phase 1

- Technology Screening to Identify Potential Peaking Unit Technologies

Phase 2

- Calculation of Gross Cost of New Entry (“CONE”)
  - Site Assumptions
  - Technology Configuration
  - Performance Estimating
  - Cost Estimating

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Phase 1 - Technology Screening

- Utilize initial screening criteria
- Technology Assessment
  - Technology maturity
  - Cost
  - Performance
  - Emissions
  - Viable for specific Load Zones/locations

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Phase 2 - Gross CONE

- Site Assumptions
  - Land/property/development costs
  - Interconnection costs (e.g. transmission, gas, etc.)
- Technology Configuration
  - Inlet cooling
  - Emissions controls (e.g. selective catalytic reduction (SCR), Oxidation catalyst, water injection, etc.)
  - Dual fuel capability
  - Indoor / outdoor
  - Water treatment/storage
- Performance Estimating
  - ISO, Summer/Winter average, Summer/Winter peak
  - Elevation

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Potential Technologies

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Technologies Likely to be Evaluated

- H/J-class Simple Cycle Gas Turbine ("SCGT")
  - With and without CLCPA-compliant fuels or operating characteristics (i.e., zero-emission production capability)
- Battery Energy Storage System ("BESS")
  - 4-hour Li-Ion BESS
  - 6-hour Li-Ion BESS
  - 8-hour Li-Ion BESS

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Technologies Not Likely to be Evaluated

- F-class SCGT
- Reciprocating Internal Combustion Engines ("RICE")
- Aeroderivative SCGT
- Combined cycle configurations (assessed for informational purposes only in prior DCRs)

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Technologies Not Likely to be Evaluated

- F-class SCGT
  - H/J-class gas turbines evaluate better compared to F-class

F-class SCGT	Commercial Operation in U.S.	ISO Capacity (MW)	HHV Heat Rate (Btu/kWh)	Initial Screening Cost ($/kW)
GE 7F.05	✓	239	9,850	$1050/kW
Siemens SGT6-5000F	✓	260	9,470	
G/H/J - Class SCGT	**Commercial Operation in U.S.**	**ISO Capacity (MW)**	**HHV Heat Rate (Btu/kWh)**	**Initial Screening Cost ($/kW)**
GE 7HA.03	✓	430	8,750	$750/kW
Siemens SGT6-9000HL	✓	440	8,770	
MPA M501JAC	✓	453	8,610	
GE 7HA.02	✓	384	8,890	$800/kW
GE 7HA.01	✓	290	9,010	$900/kW
Siemens SGT6-8000H	✓	310	9,390	
MPA M501GAC	✓	283	9,470	

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Technologies Not Likely to be Evaluated

- Reciprocating Internal Combustion Engines ("RICE")
- Aeroderivative SCGT

Aeroderivative SCGT	Commercial Operation in U.S.	ISO Capacity (MW)	HHV Heat Rate (Btu/kWh)	Initial Screening Cost ($/kW)
Siemens SGT-A35	✓	33	9,510	$2000/kW
GE LM6000PF+	✓	54	9,230	$1800/kW
MPA FT8 SWIFTPAC 60	✓	61	10,300	
MPA FT4000 SWIFTPAC 70	✓	72	9,140	
GE LMS100PB	✓	107	8,850	$1200/kW
RICE	**Commercial Operation in U.S.**	**ISO Capacity (MW)**	**HHV Heat Rate (Btu/kWh)**	**Initial Screening Cost ($/kW)**
Wartsila 18V50SG	✓	18	8,290	$1,700

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