

# Preliminary 2019 CARIS 1 Solution Results

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ESPWG/TPAS

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# 2019 CARIS 1 Schedule

- **Oct.23<sup>th</sup> ESPWG/TPAS**
  - Scenario Load Forecasts
  - 70x30 Scenario Assumptions and Calculation
- **Nov.4<sup>th</sup> ESPWG/TPAS**
  - Updated Scenario Load Forecasts
  - Preliminary Solution Results
- **Nov.18<sup>th</sup> ESPWG**
  - Solution Primary and Additional Metrics
  - Preliminary Scenario Results(High/Low load and High/Low gas price)

# Preliminary 2019 CARIS1 Solution Results

# Final Study Selection

## ■ 3 Studies Identified

- Central East
- Central East-Knickerbocker
- Volney Scriba

# Transmission Solutions

Line name	Voltage	Conductor size	Length(miles)	CE Voltage Limit Impact	Oswego Export Limit Impact
EDIC-NSL	345kV	2 - 1590 ACSR	85	400	N/A
EDIC-NSL-KN	345kV	2 - 1590 ACSR	100	400	N/A
VOLNEY-SCRIBA	345kV	2 - 1590 ACSR	10	N/A	200

# Transmission Solutions Cost Data

- **Generic per mile cost data developed based on cost data publicly available in PSC AC Transmission proceeding**
  - Adjusted with input from Transmission Owners
  - Escalated from \$2015 to \$2019
- **Project costs per mile for overhead, 345 kV construction<sup>1</sup>**
  - Low (\$4M / mile)
  - Mid (\$6M/ mile)
  - High (\$7.5M/mile)

<sup>1</sup>*Includes Station Interconnection Costs*

# Generation Solutions

Study	Generation Bus Location	#Units	Unit Size	Total Additions(MW)
Study 1: Central East	New Scotland	1	340	340
Study 2: Central East-Knickerbocker	Pleasant Valley	1	340	340
Study 3: Volney Scriba	Volney	1	340	340

# Generation Solutions

- **340 MW Combined-Cycle unit**
  - 1 x 1 x1 Siemens STG6-5000F5
- **Operating characteristics and cost data presented in 2016 Demand Curve Reset Report<sup>1</sup>**
- **Escalated costs to \$2019**
- **High/low cost estimates +/- 25% of the mid-level estimate**

<sup>1</sup>*Study to Establish New York Electricity Market ICAP Demand Curve Parameters, September 13, 2016*

# Generation Solutions Cost Data

Generation Solution	Cost Range	\$/per Unit (340 MW)
Volney(Central)	Low	\$395M
	Mid	\$525M
	High	\$655M
New Scotland (Capital)	Low	\$450M
	Mid	\$600M
	High	\$750M
Pleasant Valley (Hudson Valley/Dutchess County)	Low	\$505M
	Mid	\$675M
	High	\$845M

# Demand Response/Energy Efficiency Solutions

DR/EE Block size(MW)	Zone F	Zone G	Zone J
Study 1: Central East	100	100	200
Study 2: Central East-Knickerbocker	100	100	200
Study 3: Volney Scriba	100	100	N/A

# Demand Response Solution Costs

- **Derived from recent DPS utility filings on Commercial System Relief Program (CSRP) costs and enrollments**
  - O&R, Central Hudson, NYSEG and National Grid(Case No. 14-E-0423, Dynamic Load Management Annual Reports)
  - Con Edison(Demand Response Reservation Option Incentives)
- **Included \$/kW-month reservation fees and incentive fees paid for 100 hours annually of demand reduction**
  - Participant costs estimated to be 75% of utility payments
  - Ten years of annual costs discounted to \$2019
- **Weighted cost estimates by utility's share of zonal peak loads**
- **High/low estimates +/- 25% of mid-level costs**

# Demand Response Solution Costs

Zone	Cost Range	\$/kW
F	Low	\$150
	Mid	\$200
	High	\$250
G	Low	\$225
	Mid	\$300
	High	\$375
J	Low	\$825
	Mid	\$1,100
	High	\$1,375

# Energy Efficiency Solution Costs

- **Base generic cost estimates derived from DPS filings on Utility Energy Efficiency Programs**
  - Case No. 15-M-0252, Clean Energy Dashboard Scorecard Report
- **Weighted cost estimates by utility's share of zonal peak loads**
- **High/low estimates +/- 25% of mid-level costs**

# Energy Efficiency Solution Costs

Zone	Cost Range	\$/kW
F	Low	\$225
	Mid	\$300
	High	\$375
G	Low	\$715
	Mid	\$950
	High	\$1,200
J	Low	\$1,315
	Mid	\$1,750
	High	\$2,200

# Production Cost Savings(2019 \$M)

Study	Ten-Year Production Cost Savings (\$M)			
	Transmission Solution	Generation Solution	Demand Response	Energy Efficiency
Study 1: Central East	115	103	17	1,061
Study 2: Central East-Knickerbocker	117	110	17	1,061
Study 3: Volney Scriba	22	137	9	530

Study	2019-2023 Production Cost Savings (\$M)			
	Transmission Solution	Generation Solution	Demand Response	Energy Efficiency
Study 1: Central East	86	46	9	542
Study 2: Central East-Knickerbocker	86	51	9	542
Study 3: Volney Scriba	12	54	4	272

Study	2024-2028 Production Cost Savings (\$M)			
	Transmission Solution	Generation Solution	Demand Response	Energy Efficiency
Study 1: Central East	29	57	8	519
Study 2: Central East-Knickerbocker	31	59	8	519
Study 3: Volney Scriba	10	83	4	258

# Feedback/Comments?

- Email additional feedback to: [CYang@nyiso.com](mailto:CYang@nyiso.com)

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- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policymakers, stakeholders and investors in the power system

