



8/29/2022

# Support for NYISO Capacity Accreditation Project

Eduardo Ibanez, Ph.D.; Mitch Bringolf

GE Energy consulting

# Overview



This slide deck summarizes the capacity value calculations, evaluated for the 2022 NYISO LCR database.

Results include calculations with:

- Expected Load Carrying Capability (ELCC) technique
- Marginal Reliability Improvement (MRI) technique

# Reference



For methodology, assumptions, and more details please refer to previous presentations:

- 3/31: [https://www.nyiso.com/documents/20142/29607069/3%20GE-Support%20for%20NYISO%20Capacity%20Accreditation%20Project\\_0331.pdf](https://www.nyiso.com/documents/20142/29607069/3%20GE-Support%20for%20NYISO%20Capacity%20Accreditation%20Project_0331.pdf)
- 4/28: [https://www.nyiso.com/documents/20142/30276257/GE-Support%20for%20NYISO%20Capacity%20Accreditation%20Project\\_0428.pdf](https://www.nyiso.com/documents/20142/30276257/GE-Support%20for%20NYISO%20Capacity%20Accreditation%20Project_0428.pdf)
- 5/24: [https://www.nyiso.com/documents/20142/30888946/2%20GE-Support%20for%20NYISO%20Capacity%20Accreditation%20Project\\_0524.pdf](https://www.nyiso.com/documents/20142/30888946/2%20GE-Support%20for%20NYISO%20Capacity%20Accreditation%20Project_0524.pdf)
- 6/28: <https://www.nyiso.com/documents/20142/31830389/GE-Support-for-NYISO-Capacity-Accreditation-Project-0628.pdf>

All results in this slide deck have been previously presented at ICAPWG meetings:

- 04/28: 5% and 10% EFOR Thermal, Solar, Offshore Wind
- 05/24: Large Hydro, and the 2/4/6/8-hour Energy Duration Limited
- 06/28: Onshore Wind, Run of River Hydro, Landfill Biomass

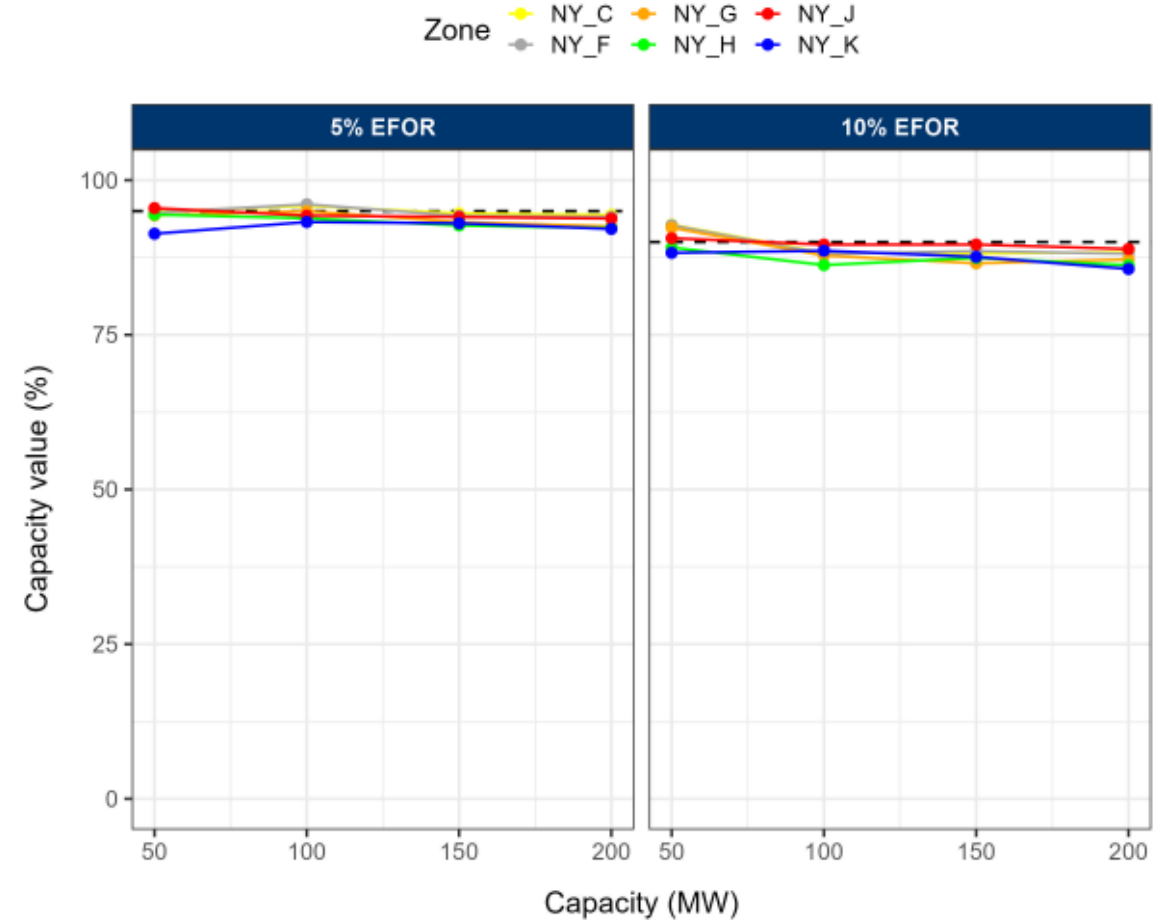


# — ELCC technique results

# Thermal - ELCC capacity values (MW and %)



EFOR	Zone	Nameplate capacity (MW)			
		50	100	150	200
5%	NY_C	47.4	95.9	141.9	188.8
	NY_F	47.4	96.1	141.3	188.1
	NY_G	47.2	95.0	139.8	185.1
	NY_H	47.2	93.8	139.0	184.5
	NY_J	47.7	94.3	141.1	187.6
	NY_K	45.7	93.2	139.5	184.2
10%	NY_C	46.4	88.2	132.2	176.7
	NY_F	46.4	88.1	132.8	176.2
	NY_G	46.2	87.8	129.8	174.4
	NY_H	44.6	86.3	131.1	172.5
	NY_J	45.3	89.6	134.4	177.7
	NY_K	44.1	88.6	131.4	171.3

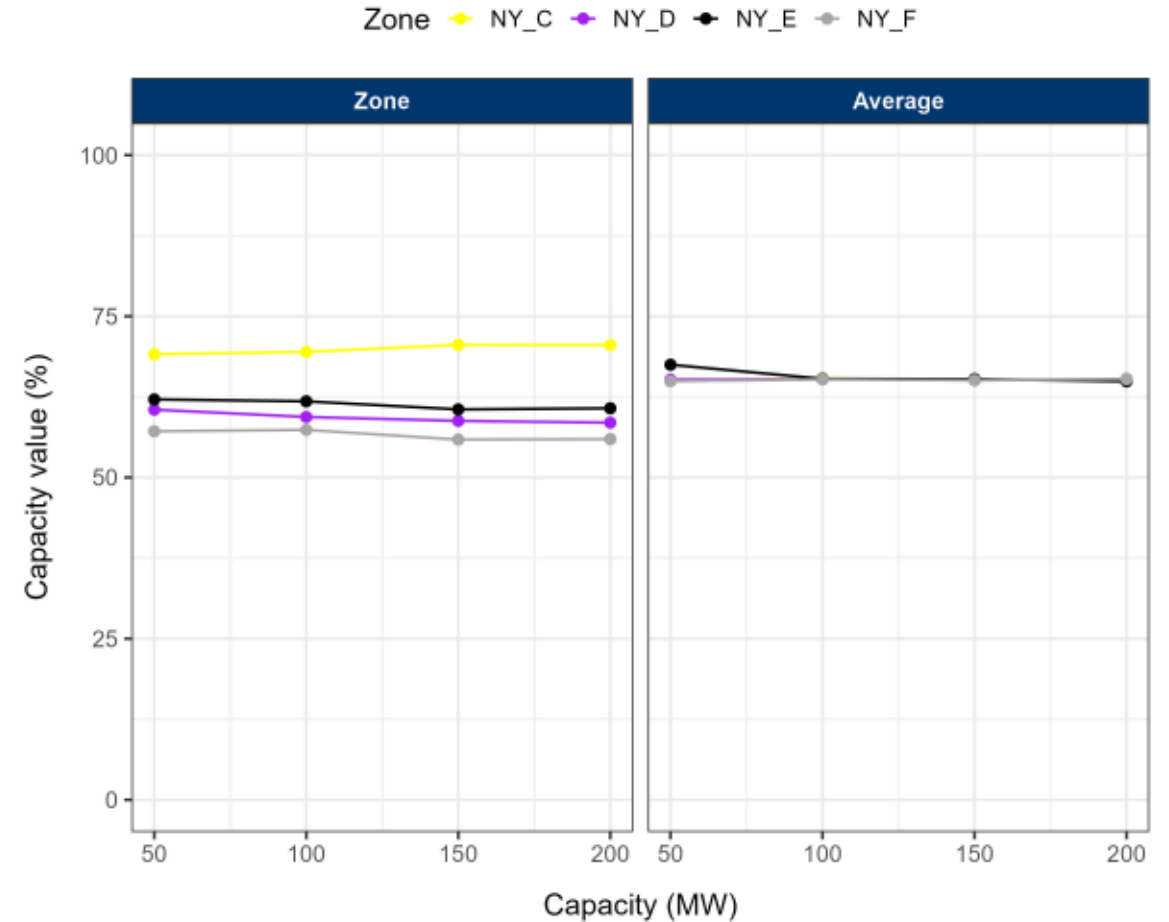


(Dashed lines represent 95% and 90%, respectively)

# Landfill biomass - ELCC capacity values (MW and %)



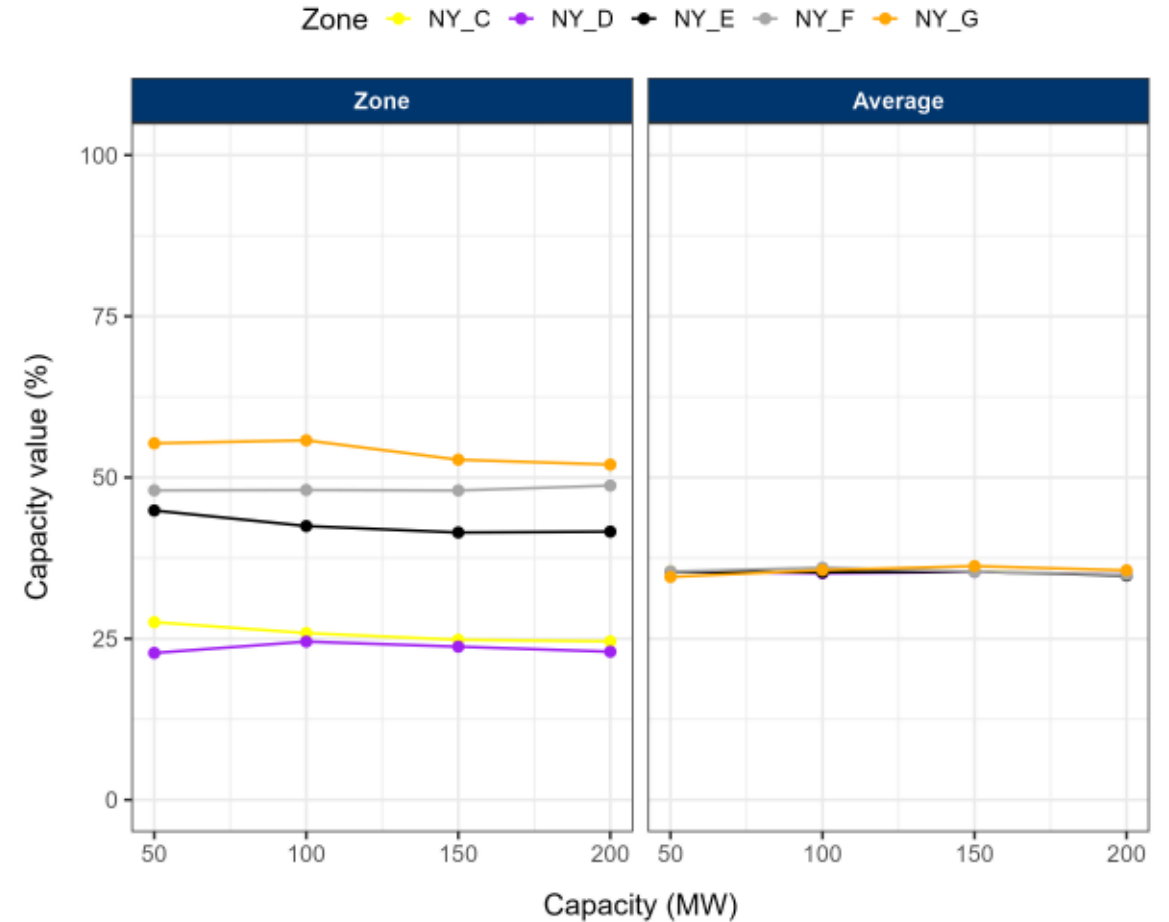
Shape	Zone	Nameplate capacity (MW)			
		50	100	150	200
Zone	NY_C	34.6	69.5	105.9	141.1
	NY_D	30.3	59.4	88.2	117.0
	NY_E	31.1	61.8	90.8	121.5
	NY_F	28.6	57.4	83.8	111.9
Average	NY_C	32.5	65.3	97.7	130.5
	NY_D	32.6	65.2	97.6	130.6
	NY_E	33.7	65.3	97.9	129.8
	NY_F	32.5	65.2	97.6	130.5



# Run-of-river - ELCC capacity values (MW and %)



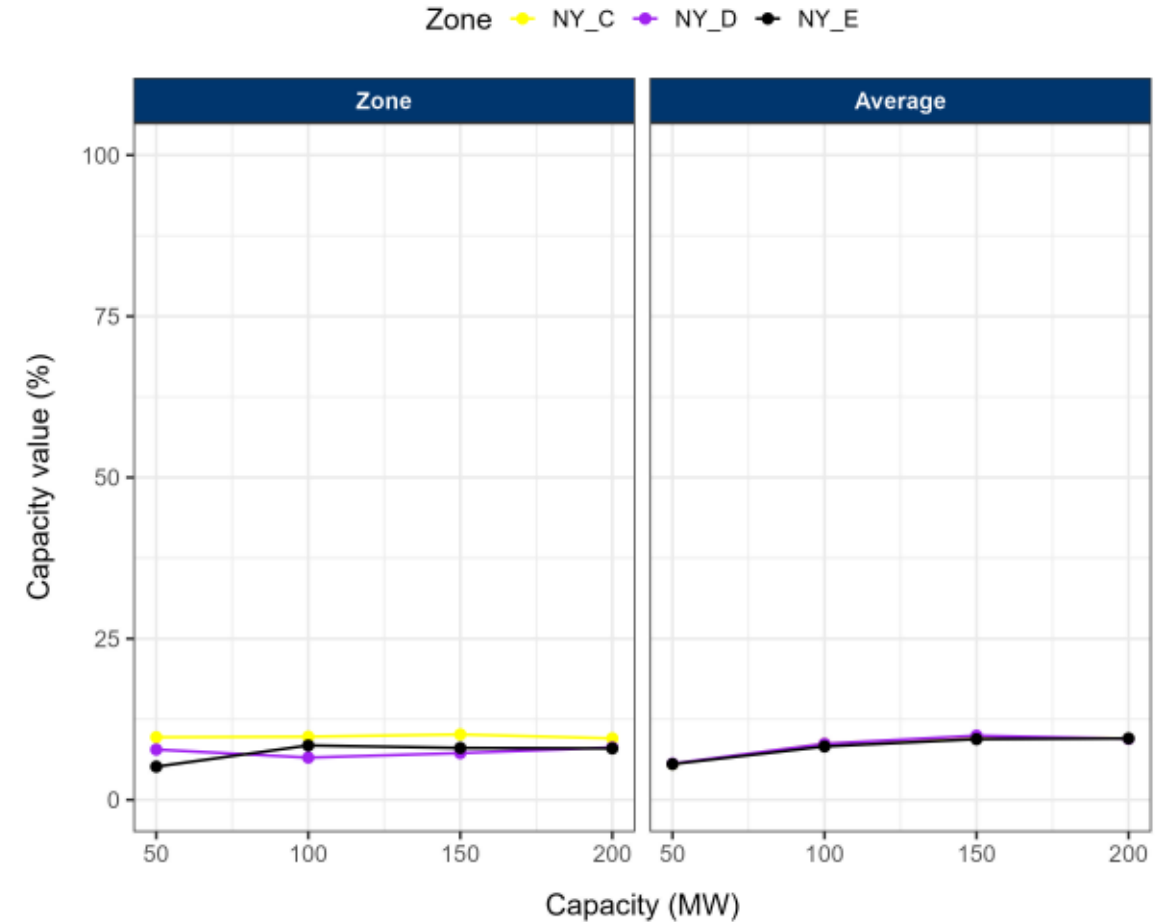
		Nameplate capacity (MW)			
Shape	Zone	50	100	150	200
Zone	NY_C	13.8	25.9	37.2	49.2
	NY_D	11.4	24.5	35.6	46.0
	NY_E	22.4	42.5	62.2	83.2
	NY_F	24.0	48.1	72.0	97.5
	NY_G	27.7	55.8	79.1	104.0
Average	NY_C	17.7	35.2	53.2	69.9
	NY_D	17.7	35.2	53.1	70.0
	NY_E	17.7	35.3	53.1	69.6
	NY_F	17.7	36.0	53.1	69.9
	NY_G	17.3	35.6	54.4	71.2



# Onshore wind - ELCC capacity values (MW and %)



		Nameplate capacity (MW)			
Shape	Zone	50	100	150	200
Zone	NY_C	4.9	9.8	15.2	19.1
	NY_D	3.9	6.6	10.9	16.2
	NY_E	2.6	8.4	12.1	15.9
Average	NY_C	2.8	8.7	14.8	19.0
	NY_D	2.8	8.7	14.9	18.9
	NY_E	2.8	8.3	14.1	19.0

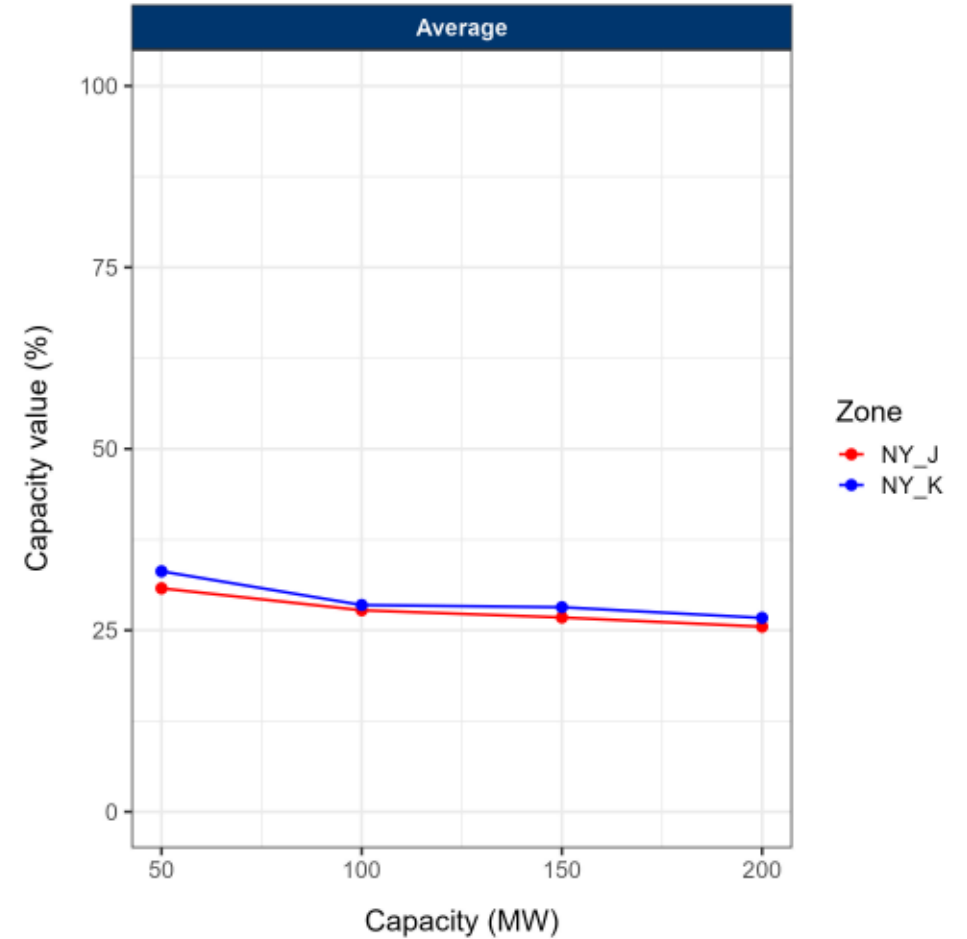




# Offshore wind - ELCC capacity values (MW and %)



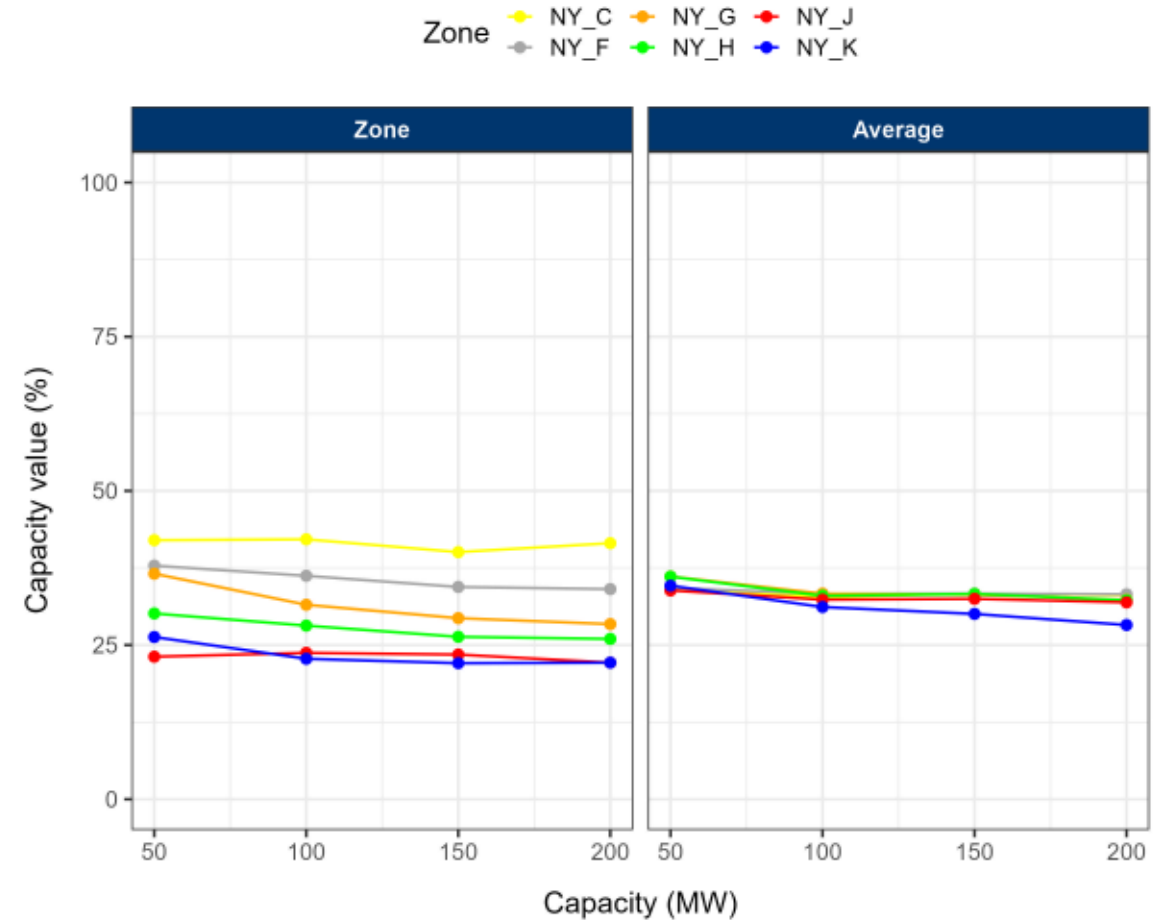
		Nameplate capacity (MW)			
Shape	Zone	50	100	150	200
Average	NY_J	15.4	27.8	40.2	51.0
	NY_K	16.6	28.5	42.3	53.4



# Solar - ELCC capacity values (MW and %)



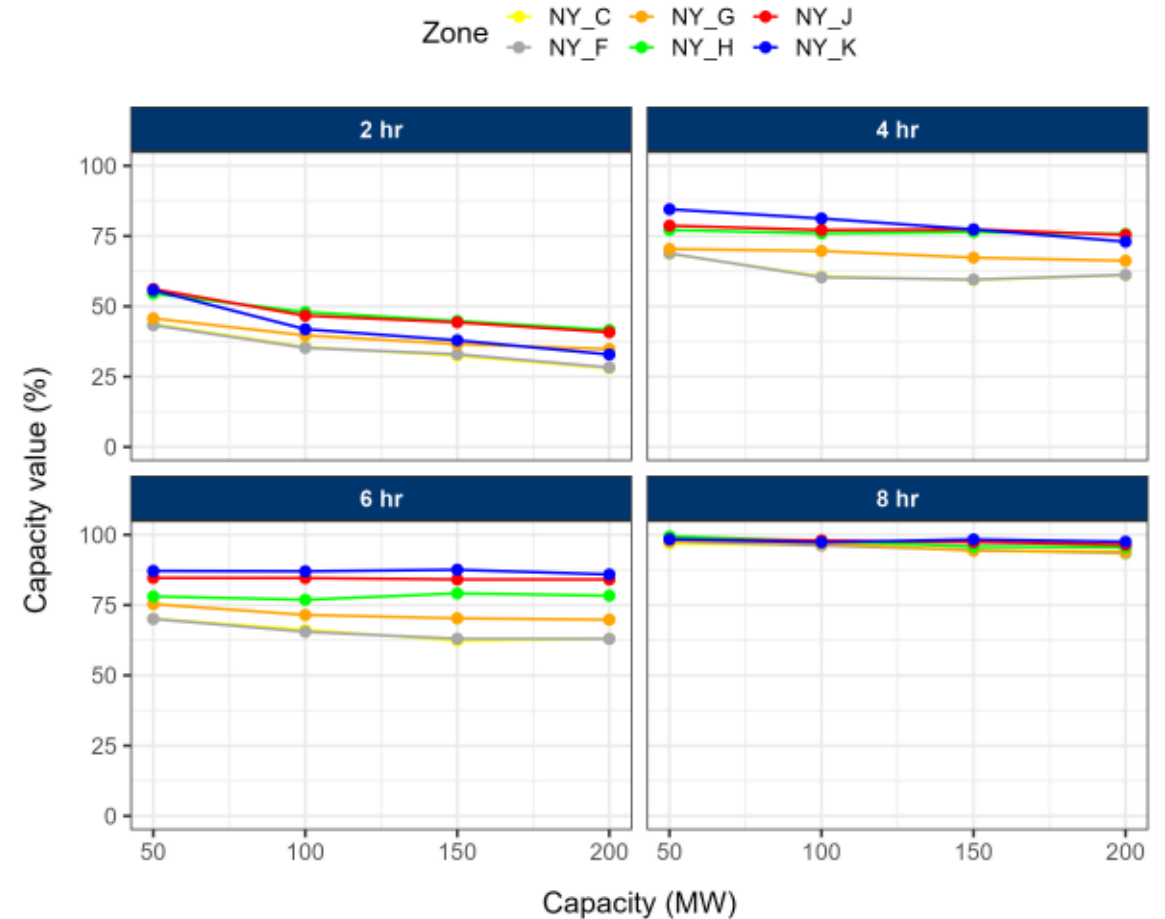
		Nameplate capacity (MW)			
Shape	Zone	50	100	150	200
Zone	NY_C	21.0	42.1	60.1	83.0
	NY_F	18.9	36.2	51.6	68.1
	NY_G	18.3	31.5	44.0	56.8
	NY_H	15.1	28.2	39.5	52.0
	NY_J	11.6	23.7	35.2	44.3
	NY_K	13.2	22.8	33.1	44.3
Average	NY_C	17.1	32.8	50.0	66.2
	NY_F	17.1	33.3	50.0	66.5
	NY_G	18.1	33.3	49.8	64.7
	NY_H	18.0	33.0	49.9	64.5
	NY_J	16.9	32.4	48.7	63.8
	NY_K	17.3	31.2	45.1	56.5



# Energy Duration Limited – Shape-based model ELCC capacity values (MW and %)



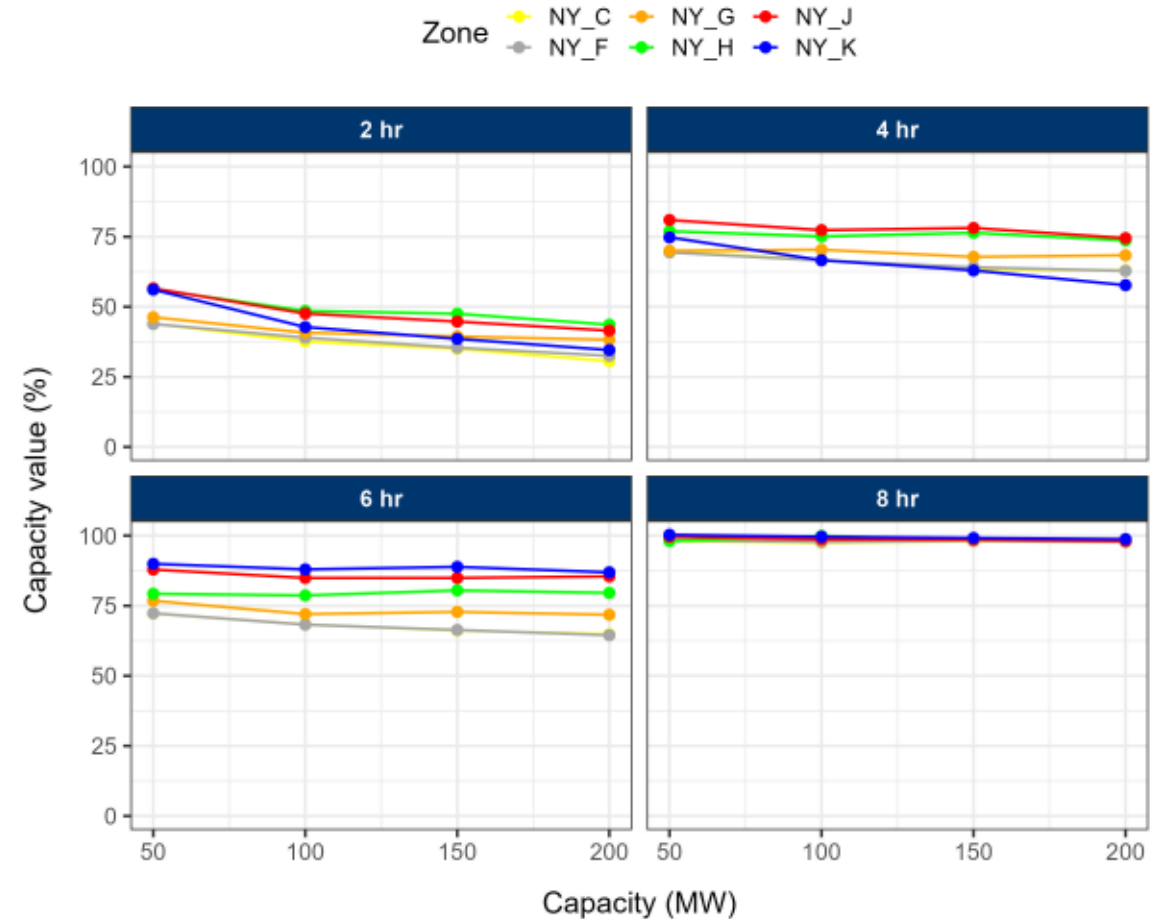
Duration (h)	Zone	Nameplate capacity (MW)			
		50	100	150	200
2	NY_C	21.8	35.6	48.6	56.0
	NY_F	21.6	35.2	49.5	56.6
	NY_G	22.9	39.7	54.8	69.7
	NY_H	27.3	48.0	67.2	83.2
	NY_J	28.1	46.7	66.5	81.6
	NY_K	27.9	41.9	56.9	65.8
4	NY_C	34.3	60.7	89.1	122.2
	NY_F	34.4	60.3	89.3	122.4
	NY_G	35.2	69.7	101.0	132.4
	NY_H	38.6	76.0	114.6	151.4
	NY_J	39.3	77.1	116.0	150.8
	NY_K	42.3	81.2	116.0	146.0
6	NY_C	35.1	66.2	93.5	126.0
	NY_F	35.0	65.5	94.5	126.0
	NY_G	37.7	71.5	105.4	139.6
	NY_H	39.0	76.9	118.7	156.7
	NY_J	42.3	84.6	126.2	168.2
	NY_K	43.6	87.0	131.3	171.8
8	NY_C	48.4	96.3	141.7	186.6
	NY_F	48.8	96.1	141.9	187.0
	NY_G	49.0	96.9	141.4	188.1
	NY_H	49.7	97.7	143.7	191.1
	NY_J	49.2	98.0	146.0	192.9
	NY_K	49.2	97.3	147.5	195.0



# Energy Duration Limited – Dynamic model ELCC capacity values (MW and %)



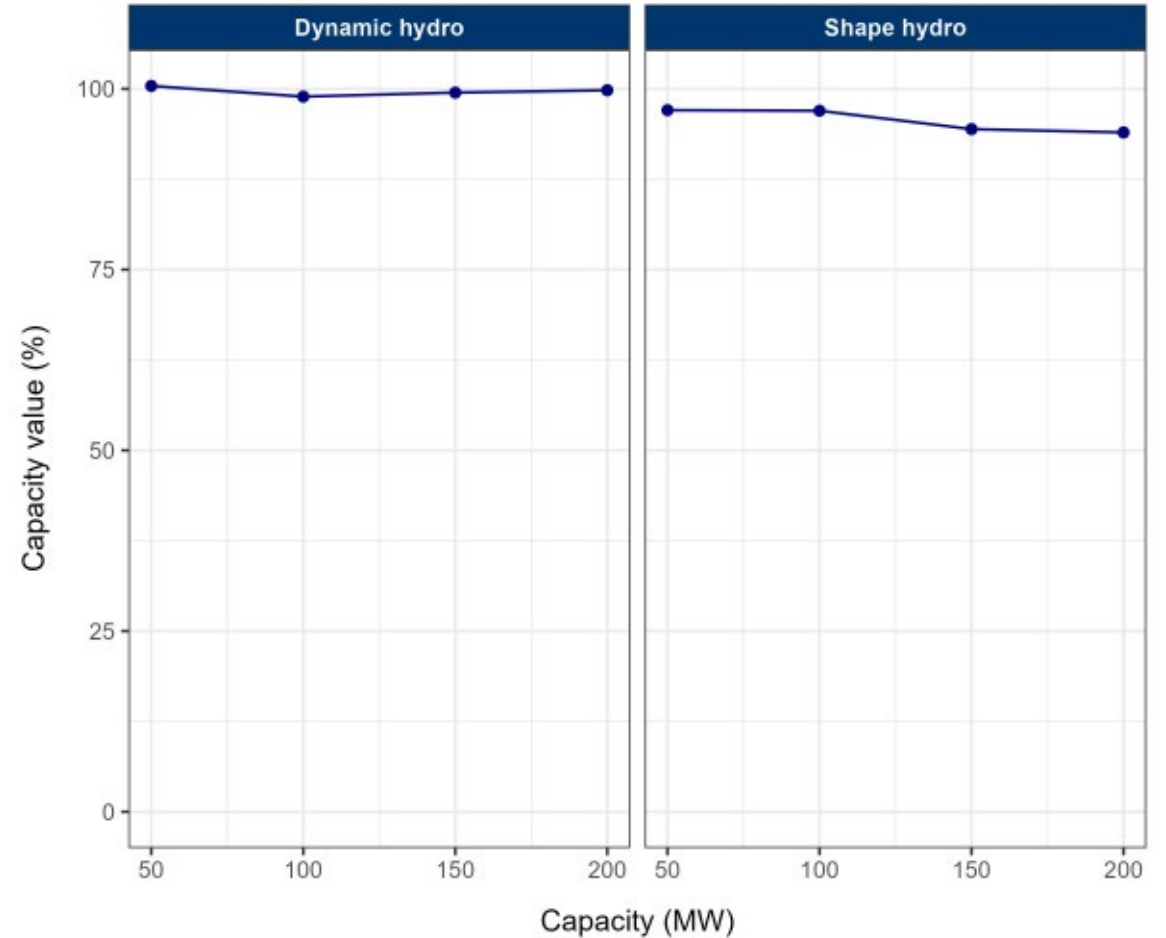
Duration (h)	Zone	Nameplate capacity (MW)			
		50	100	150	200
2	NY_C	22.0	37.7	52.5	61.3
	NY_F	21.9	39.0	53.1	65.1
	NY_G	23.1	40.8	59.2	76.5
	NY_H	28.1	48.6	71.3	87.2
	NY_J	28.3	47.6	67.1	83.0
	NY_K	28.1	42.8	57.8	69.2
4	NY_C	34.9	66.8	95.1	126.0
	NY_F	34.7	66.5	96.2	125.6
	NY_G	35.0	70.4	101.7	136.8
	NY_H	38.5	75.1	114.6	147.3
	NY_J	40.5	77.3	117.2	149.0
	NY_K	37.4	66.6	94.4	115.4
6	NY_C	36.1	68.3	99.3	129.7
	NY_F	36.2	68.3	99.5	129.0
	NY_G	38.4	72.0	109.2	143.6
	NY_H	39.6	78.7	120.7	159.2
	NY_J	44.0	84.9	127.4	170.9
	NY_K	45.0	88.0	133.3	173.9
8	NY_C	49.1	97.4	147.0	195.6
	NY_F	49.2	97.7	147.1	195.6
	NY_G	49.8	99.0	147.5	196.7
	NY_H	49.0	99.9	148.0	196.7
	NY_J	49.8	98.7	147.9	196.1
	NY_K	50.2	99.7	148.8	197.5



# Large Hydro - ELCC capacity values (MW and %)



Model	Nameplate capacity (MW)			
	50	100	150	200
Dynamic large hydro	50.0	98.9	149.2	199.6
Shape large hydro	48.5	97.0	141.7	188.0





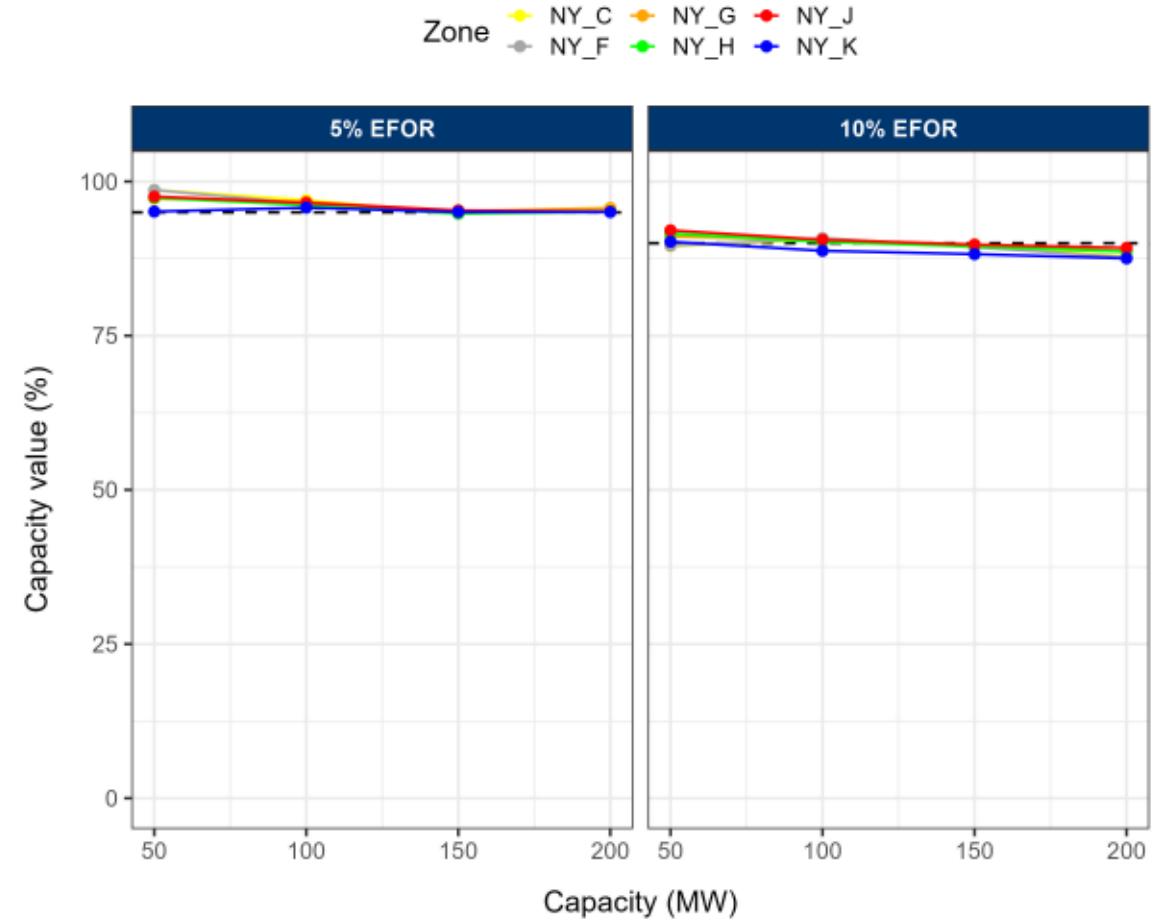
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# MRI technique results

# Thermal - MRI capacity values (MW and %)



EFOR	Zone	Nameplate capacity (MW)			
		50	100	150	200
5%	NY_C	49.3	97.0	142.2	190.1
	NY_F	49.3	96.4	142.1	190.8
	NY_G	48.6	96.7	142.8	191.4
	NY_H	48.7	96.2	142.2	190.2
	NY_J	48.8	96.5	143.0	190.2
	NY_K	47.6	95.8	142.6	190.1
10%	NY_C	44.8	90.7	134.4	175.7
	NY_F	44.8	90.8	134.0	175.4
	NY_G	45.5	90.5	134.7	177.2
	NY_H	45.8	90.2	134.2	177.3
	NY_J	46.0	90.6	134.6	178.4
	NY_K	45.1	88.8	132.3	175.1

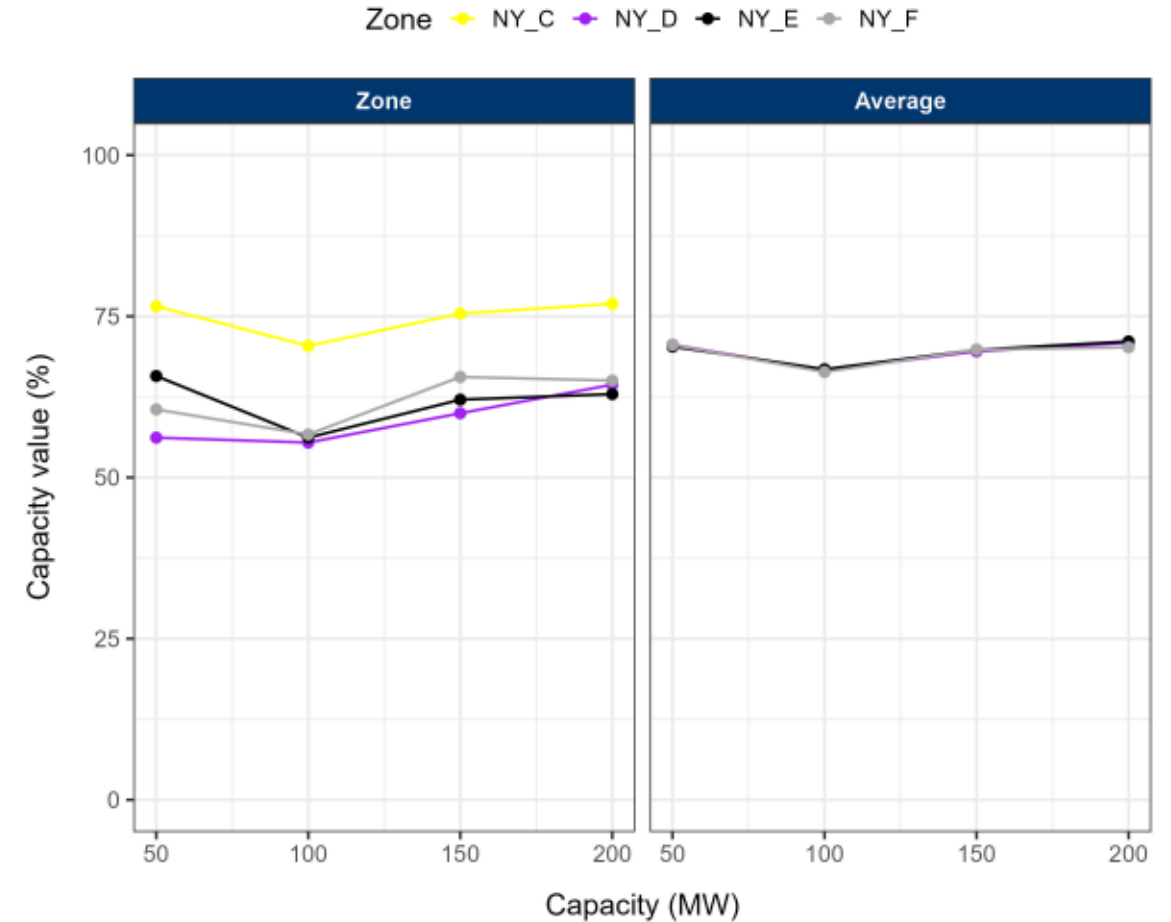


(Dashed lines represent 95% and 90%, respectively)

# Landfill biomass - MRI capacity values (MW and %)



Shape	Zone	Nameplate capacity (MW)			
		50	100	150	200
Zone	NY_C	38.3	70.4	113.1	153.9
	NY_D	28.1	55.4	89.9	128.8
	NY_E	32.9	56.2	93.1	125.9
	NY_F	30.3	56.7	98.4	130.1
Average	NY_C	35.3	66.7	104.3	141.9
	NY_D	35.3	66.6	104.3	141.8
	NY_E	35.1	66.8	104.7	142.2
	NY_F	35.3	66.4	104.7	140.4

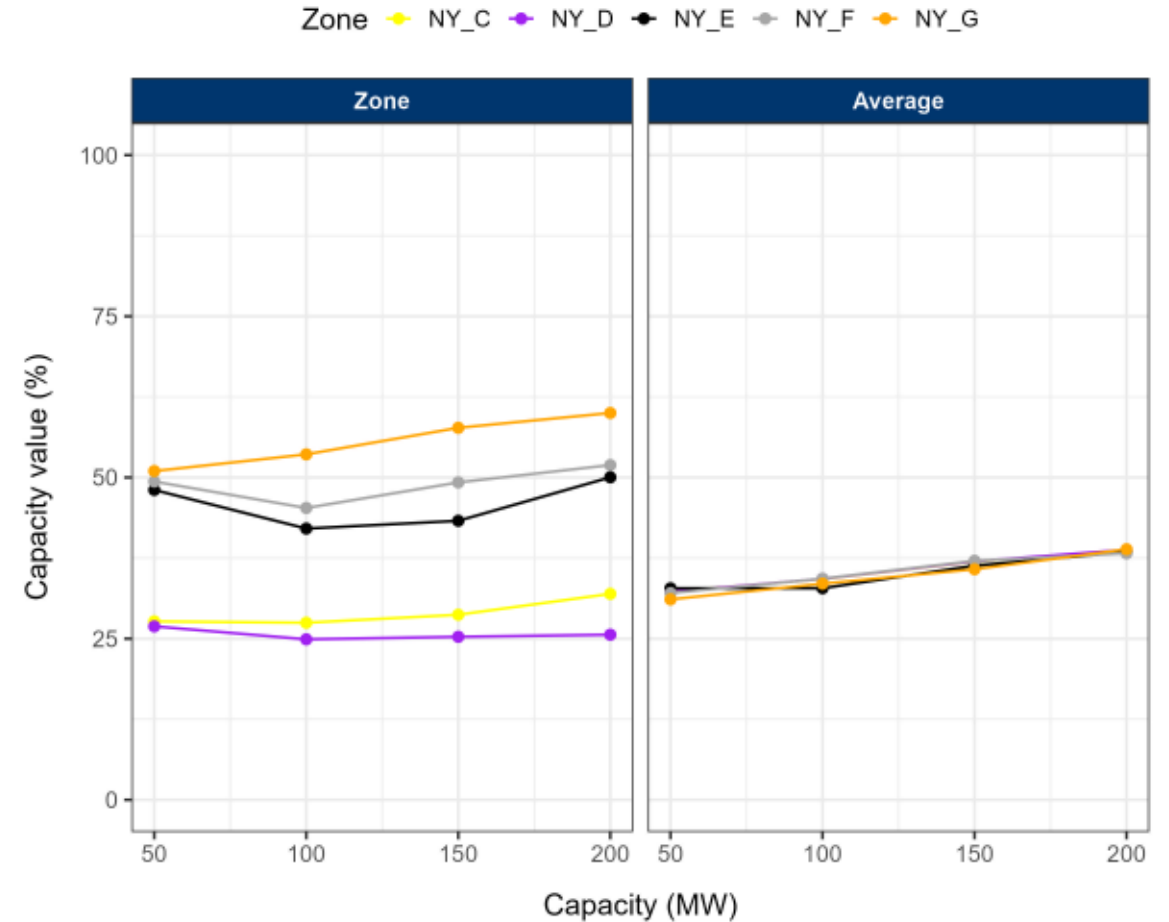




# Run-of-river - MRI capacity values (MW and %)



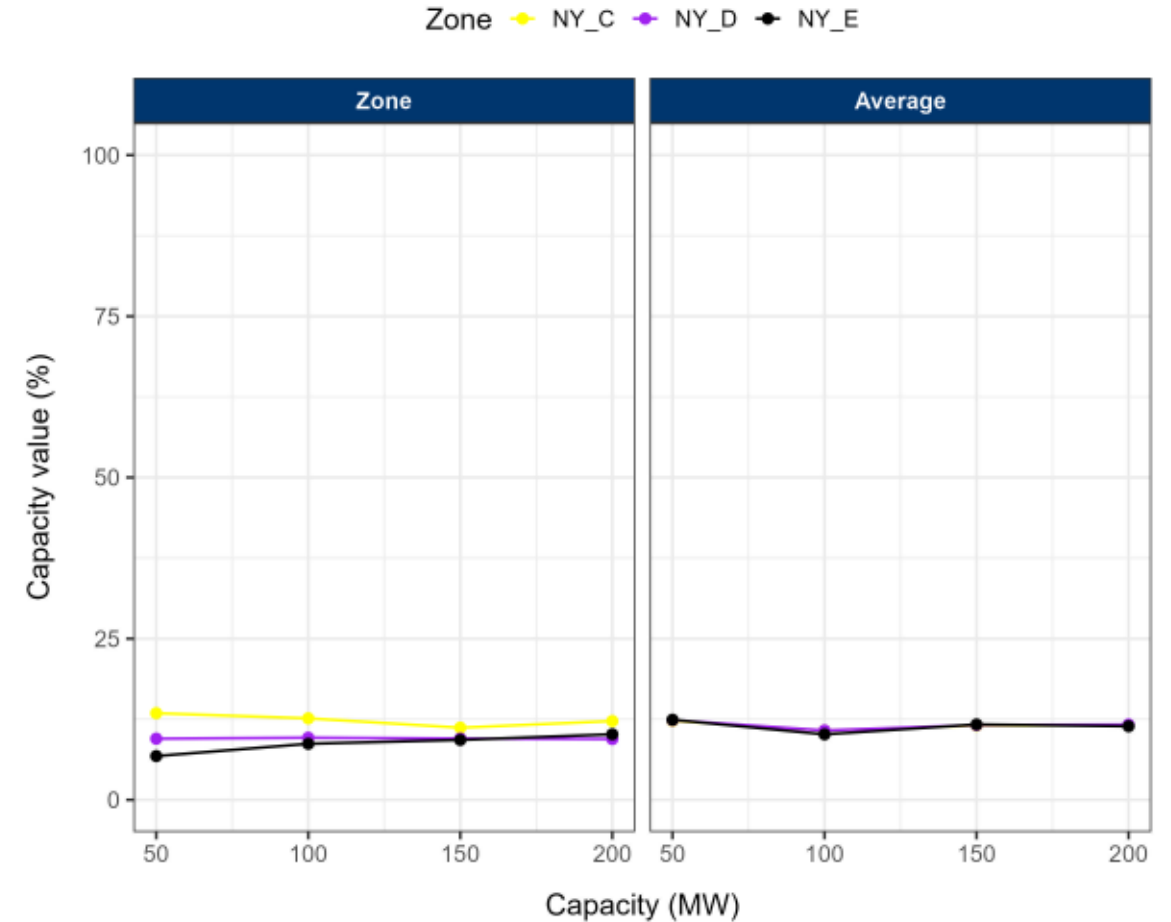
		Nameplate capacity (MW)			
Shape	Zone	50	100	150	200
Zone	NY_C	13.8	27.5	43.1	63.9
	NY_D	13.5	24.9	37.9	51.2
	NY_E	24.0	42.1	64.9	100.1
	NY_F	24.7	45.3	73.9	103.8
	NY_G	25.5	53.6	86.6	120.0
Average	NY_C	16.1	34.2	55.4	77.5
	NY_D	16.1	34.3	55.5	77.6
	NY_E	16.4	32.8	54.5	76.9
	NY_F	16.0	34.3	55.6	76.5
	NY_G	15.5	33.5	53.6	77.7



# Onshore wind - MRI capacity values (MW and %)



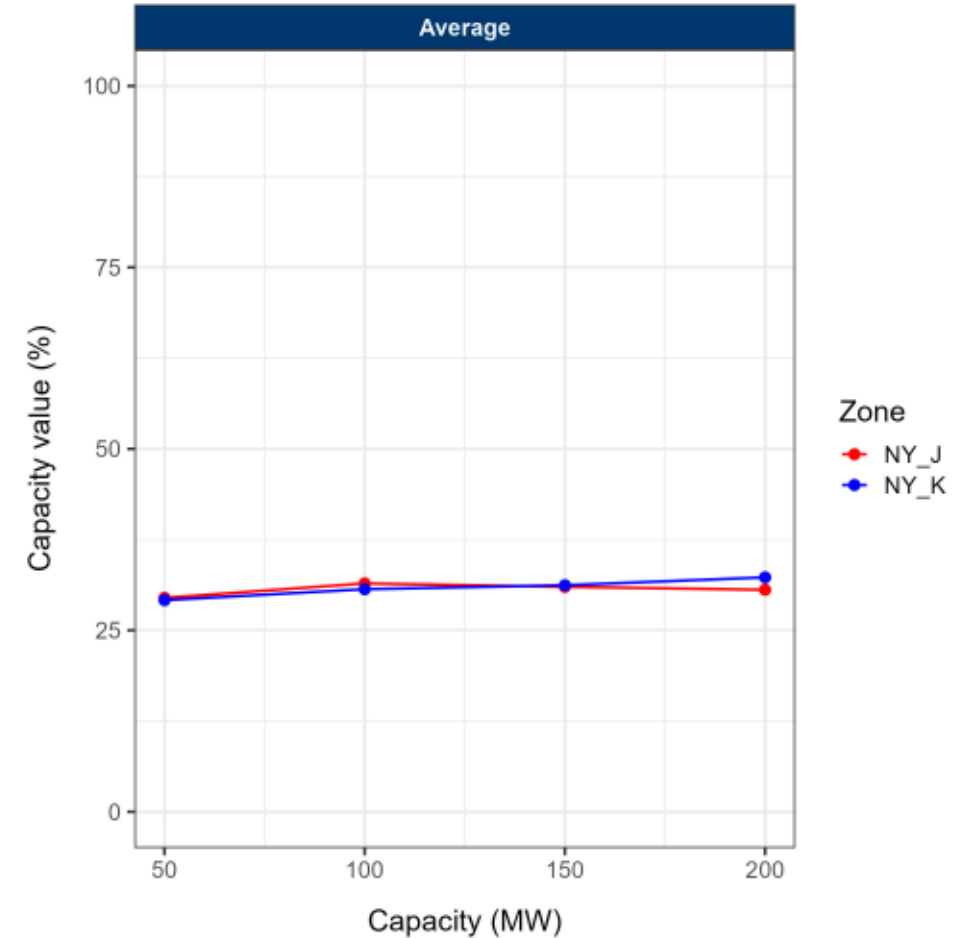
		Nameplate capacity (MW)			
Shape	Zone	50	100	150	200
Zone	NY_C	6.7	12.6	16.8	24.4
	NY_D	4.7	9.6	14.3	18.9
	NY_E	3.4	8.7	13.9	20.3
Average	NY_C	6.1	10.8	17.3	23.2
	NY_D	6.2	10.8	17.4	23.3
	NY_E	6.2	10.2	17.5	22.8



# Offshore wind - MRI capacity values (MW and %)



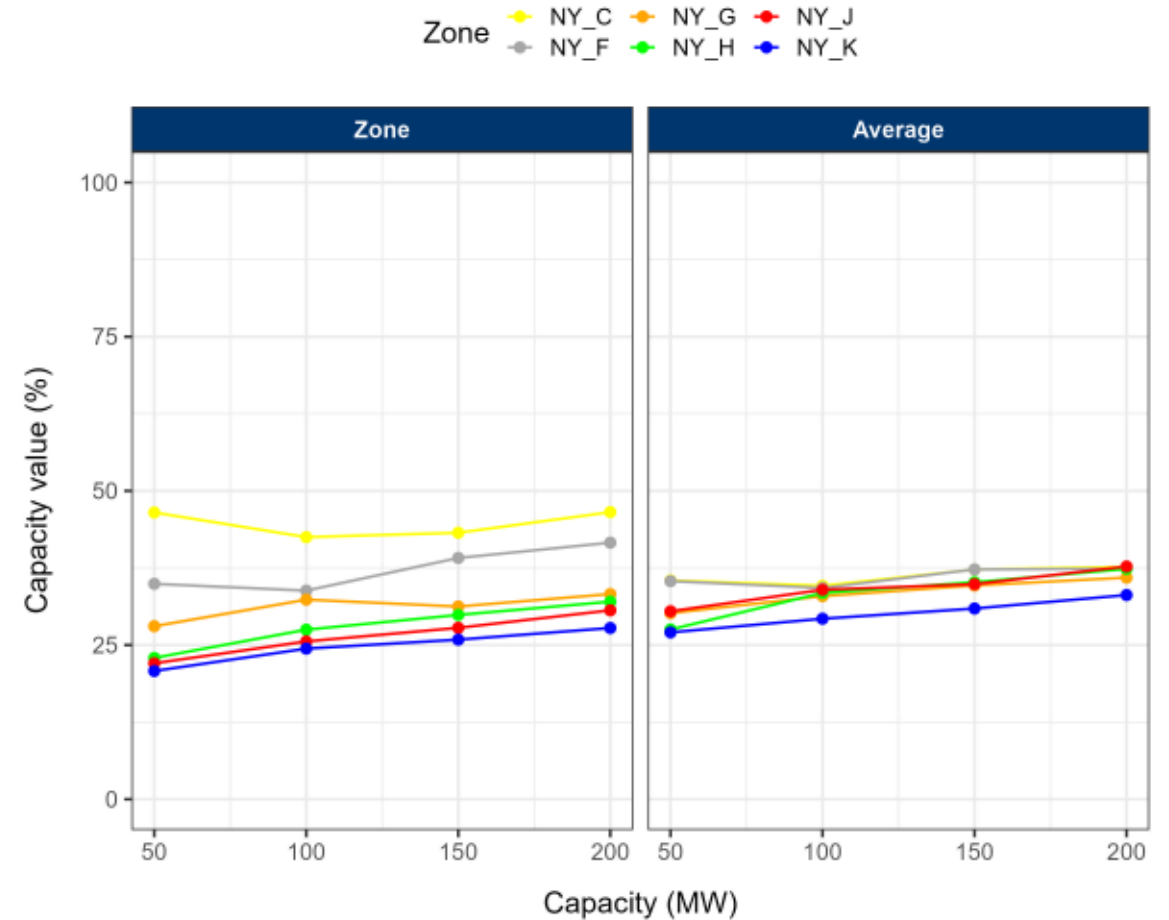
Shape	Zone	Nameplate capacity (MW)			
		50	100	150	200
Average	NY_J	14.4	29.5	43.3	58.2
	NY_K	14.6	28.0	43.5	59.6



# Solar - MRI capacity values (MW and %)



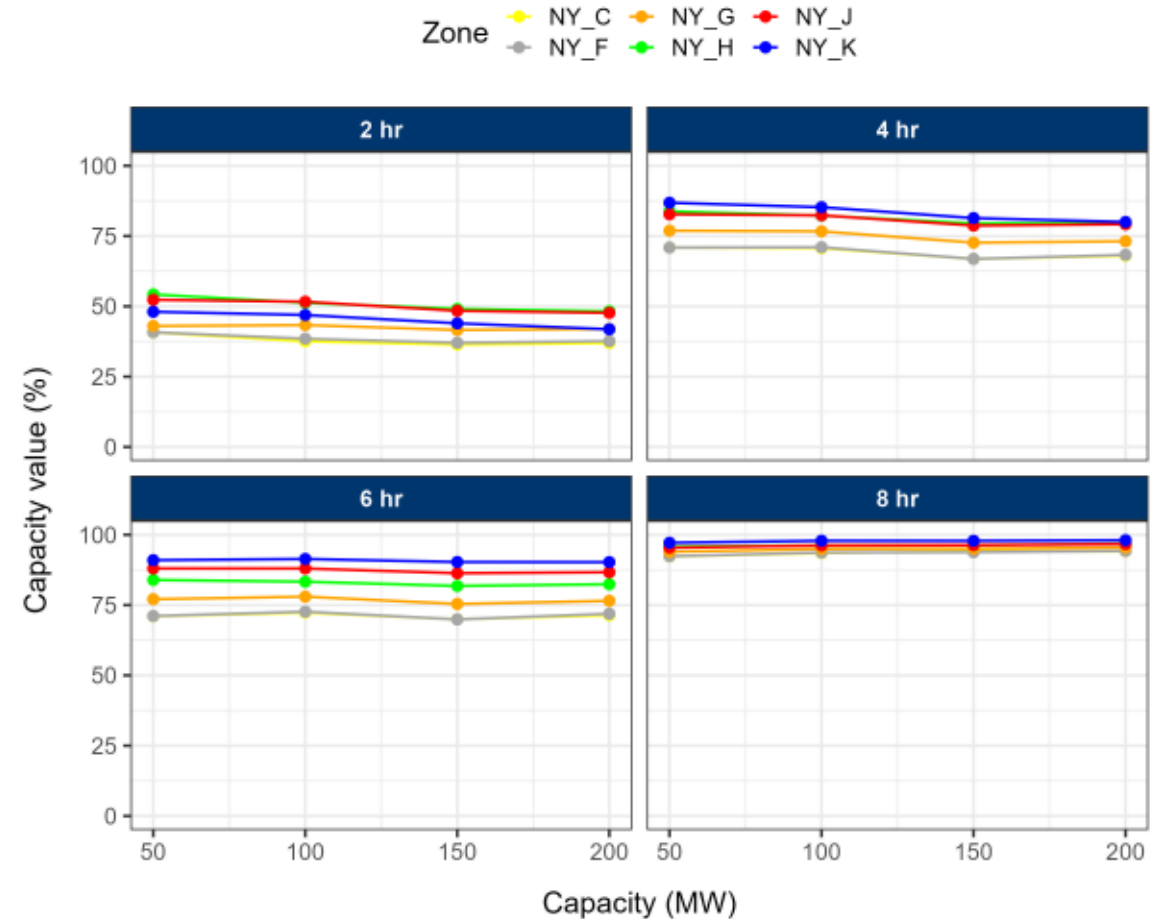
		Nameplate capacity (MW)			
Shape	Zone	50	100	150	200
Zone	NY_C	23.2	42.5	64.8	93.1
	NY_F	17.5	33.8	58.7	83.2
	NY_G	14.0	32.4	46.9	66.5
	NY_H	11.5	27.5	44.8	64.1
	NY_J	11.0	25.6	41.7	61.3
	NY_K	10.4	24.4	38.8	55.5
Average	NY_C	17.7	34.6	55.9	75.4
	NY_F	17.7	34.3	55.9	74.8
	NY_G	15.1	32.9	52.0	71.9
	NY_H	13.8	33.5	52.8	74.7
	NY_J	15.2	34.0	52.3	75.5
	NY_K	13.5	29.3	46.4	66.2



# Energy Duration Limited – Shape-based model MRI capacity values (MW and %)



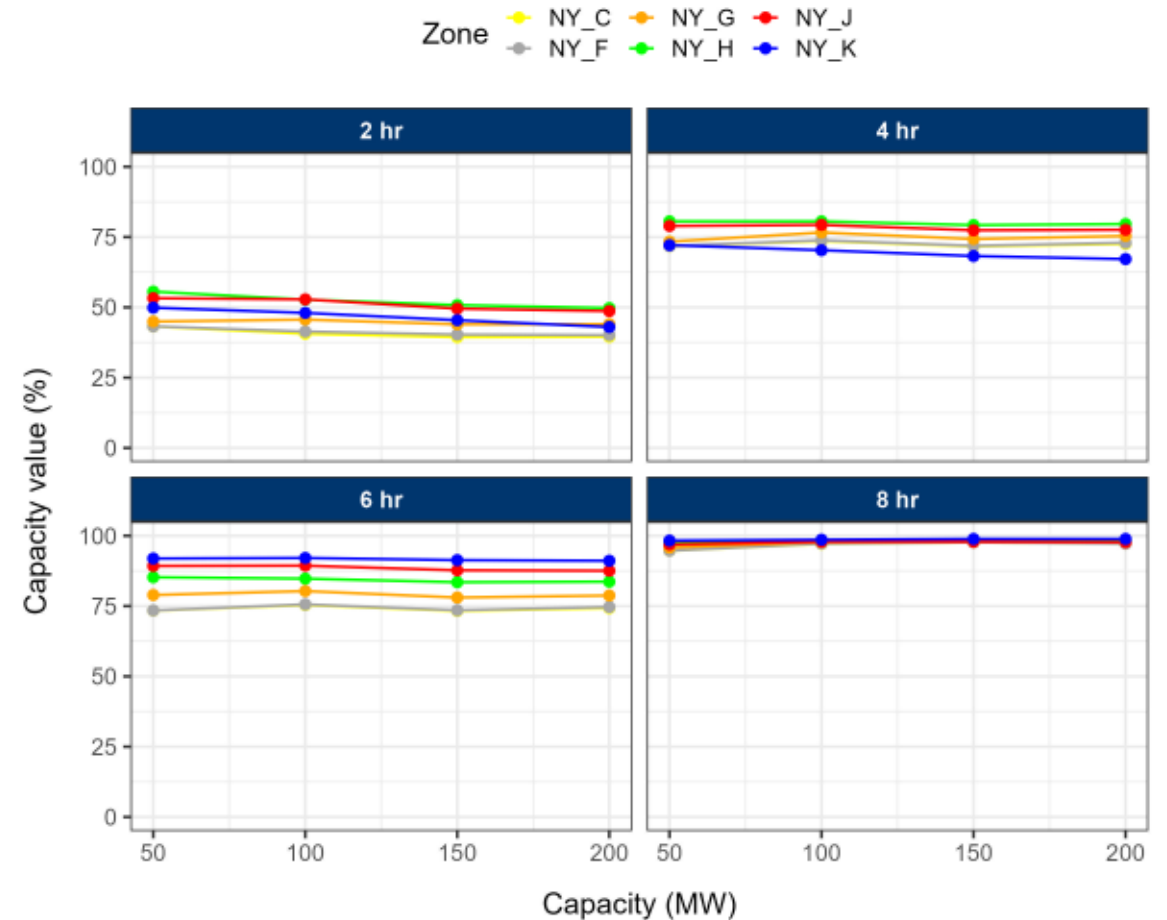
Duration (h)	Zone	Nameplate capacity (MW)			
		50	100	150	200
2	NY_C	20.4	37.6	54.6	73.9
	NY_F	20.4	38.5	55.6	75.3
	NY_G	21.5	43.3	62.4	84.0
	NY_H	27.1	51.3	73.6	96.5
	NY_J	26.2	51.6	72.6	95.4
	NY_K	24.0	46.9	65.9	83.7
4	NY_C	35.5	70.7	100.3	136.1
	NY_F	35.4	71.0	100.3	136.6
	NY_G	38.5	76.7	109.0	146.3
	NY_H	41.9	82.3	119.2	159.0
	NY_J	41.4	82.4	118.1	158.4
	NY_K	43.4	85.2	122.1	160.0
6	NY_C	35.5	72.3	104.9	142.8
	NY_F	35.6	72.6	104.8	143.8
	NY_G	38.5	78.0	113.1	153.0
	NY_H	42.0	83.3	122.7	164.8
	NY_J	44.0	88.0	129.5	173.3
	NY_K	45.5	91.4	135.5	180.5
8	NY_C	46.2	93.5	141.1	188.3
	NY_F	46.2	93.7	140.7	188.5
	NY_G	47.0	94.9	142.5	190.9
	NY_H	47.9	96.2	144.4	193.6
	NY_J	47.7	96.2	144.4	193.4
	NY_K	48.6	97.9	146.8	196.1



# Energy Duration Limited – Dynamic model MRI capacity values (MW and %)



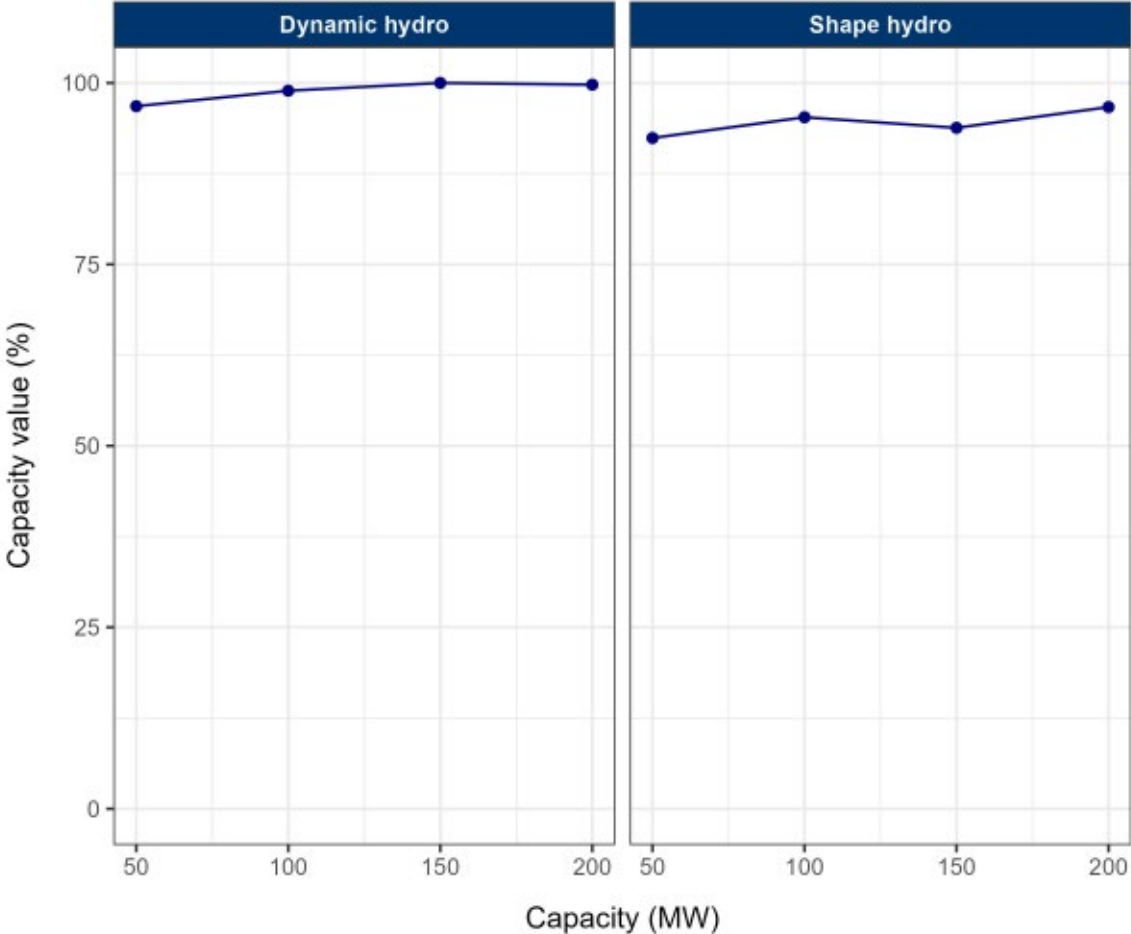
Duration (h)	Zone	Nameplate capacity (MW)			
		50	100	150	200
2	NY_C	21.6	40.6	59.1	79.1
	NY_F	21.6	41.4	60.5	80.3
	NY_G	22.5	45.6	65.9	88.0
	NY_H	27.8	52.7	76.2	99.5
	NY_J	26.6	52.8	74.3	97.4
	NY_K	24.9	48.0	68.2	86.0
4	NY_C	35.9	73.6	107.5	145.2
	NY_F	35.9	73.8	107.8	145.9
	NY_G	36.7	76.6	111.4	150.8
	NY_H	40.3	80.6	118.9	159.2
	NY_J	39.5	79.3	116.1	155.1
	NY_K	36.1	70.3	102.4	134.3
6	NY_C	36.7	75.4	109.9	148.6
	NY_F	36.7	75.6	110.3	149.3
	NY_G	39.5	80.3	117.0	157.5
	NY_H	42.6	84.8	125.2	167.4
	NY_J	44.6	89.4	131.6	175.1
	NY_K	46.0	92.1	137.0	182.2
8	NY_C	47.3	97.1	146.5	194.4
	NY_F	47.3	97.2	146.5	194.4
	NY_G	47.9	97.7	146.8	195.6
	NY_H	48.6	98.0	147.2	196.3
	NY_J	48.5	97.9	146.8	195.4
	NY_K	49.1	98.6	148.3	197.7



# Large Hydro - MRI capacity values (MW and %)



Model	Nameplate capacity (MW)			
	50	100	150	200
Dynamic large hydro	48.4	98.9	150.0	199.5
Shape large hydro	46.2	95.3	140.7	193.4









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8/12/2022

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- GE Industrial operating & Vertical earnings and EPS, which is operating earnings of our industrial businesses and the GE Capital businesses that we expect to retain.
- GE Industrial & Verticals revenues, which is revenue of our industrial businesses and the GE Capital businesses that we expect to retain.
- Industrial segment organic revenue, which is the sum of revenue from all of our industrial segments less the effects of acquisitions/dispositions and currency exchange.
- Industrial segment organic operating profit, which is the sum of segment profit from all of our industrial segments less the effects of acquisitions/dispositions and currency exchange.
- Industrial cash flows from operating activities (Industrial CFOA), which is GE's cash flow from operating activities excluding dividends received from GE Capital.
- Capital lending net investment (ENI), excluding liquidity, which is a measure we use to measure the size of our Capital segment.
- GE Capital Tier 1 Common ratio estimate is a ratio of equity