CCSTF Non-Binding Poll Results

Melissa Pilong, Performance Compliance

Capacity Capability Senior Task Force

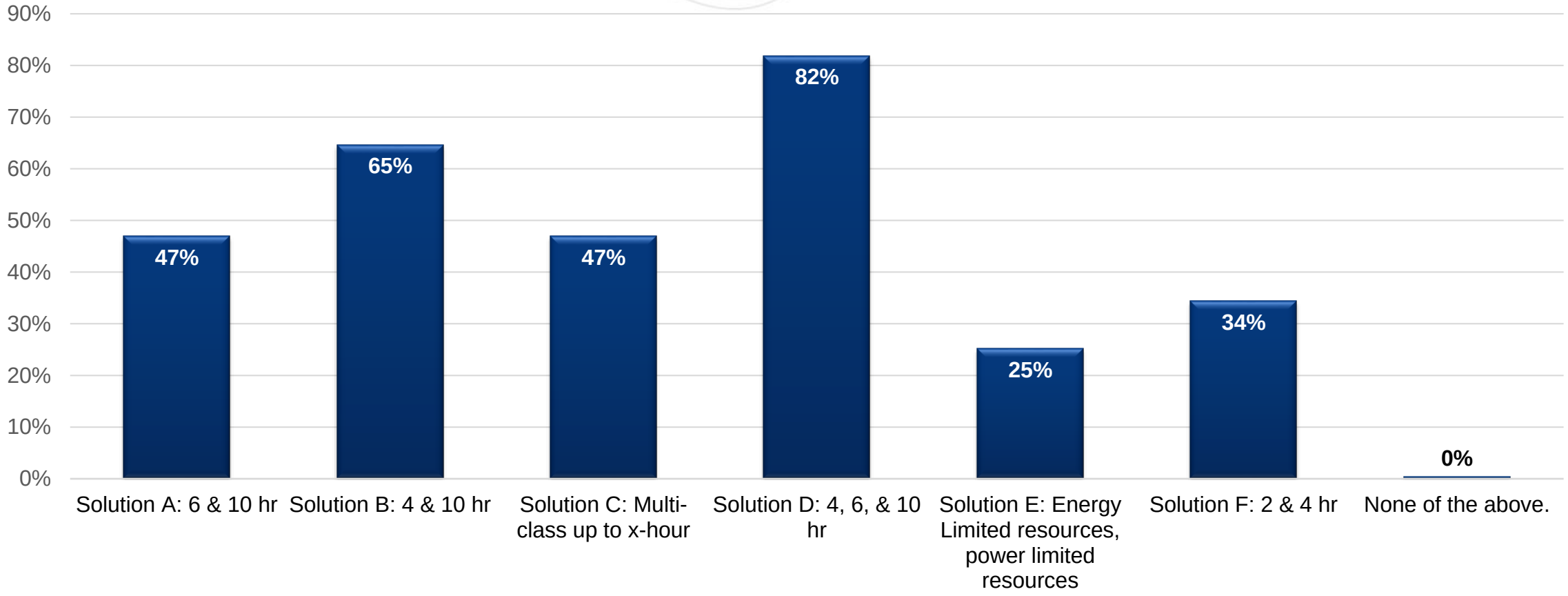
July 10, 2020

Summary

- Non-binding poll on solutions options for the following Design Components (DC)
  - Class distinctions; timing of class assessment and accreditation; considerations of a changing ELCC; performance adjustment
- Response format of multiple choice (including ability to select more than one option), ranking, and open text
- Total of 238 respondents
  - 63 Voting Members
  - 168 Affiliates
  - 1 State
  - 6 Non-Members

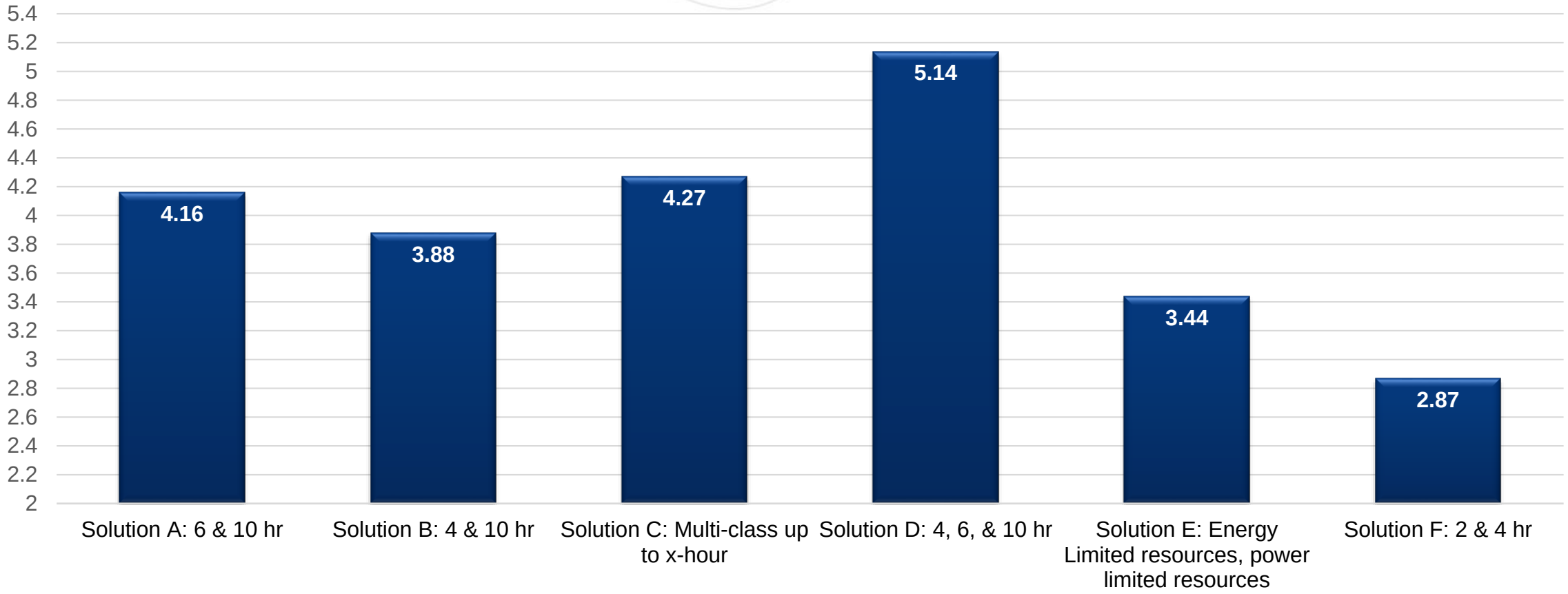
DC 1: Class Distinctions

Q1: Options for “Limited Resources“, Design Component 1 that Stakeholders Can Support



DC 1: Class Distinctions

Responses to Q2 In Order of Overall Ranking (Weighted Average)



DC 1: Class Distinctions

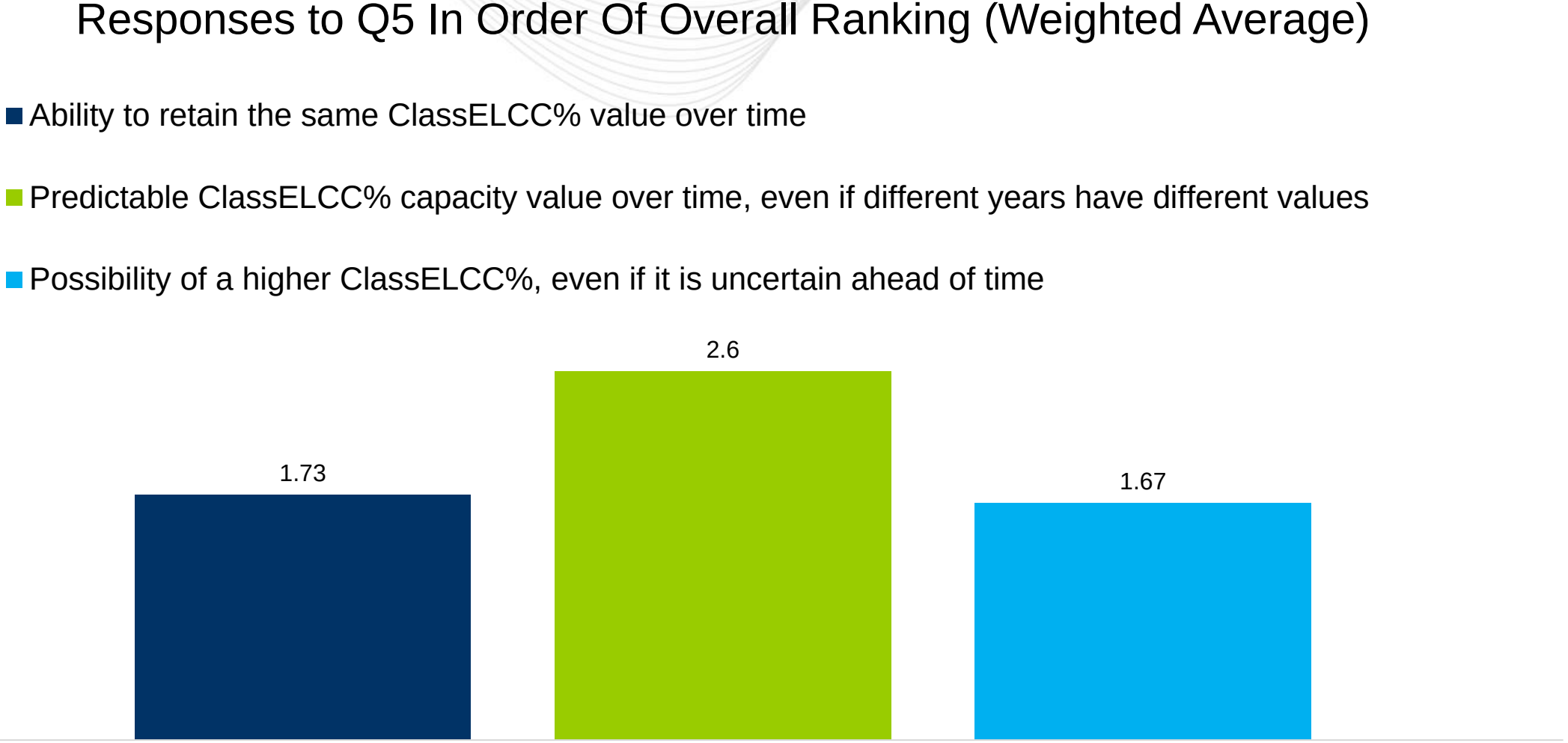
Q3: Support for a solution option in Question 1 was contingent on:

- 52% responded the **presence of** a 4-hour class
- 15% responded the **absence of** a 4-hour class
- 34% responded neither presence, nor absence of a 4-hour class

Q4: Open text responses and, therefore, not included.

DC 2a: Timing of Class Assessment & Accreditation

Responses to Q5 In Order Of Overall Ranking (Weighted Average)



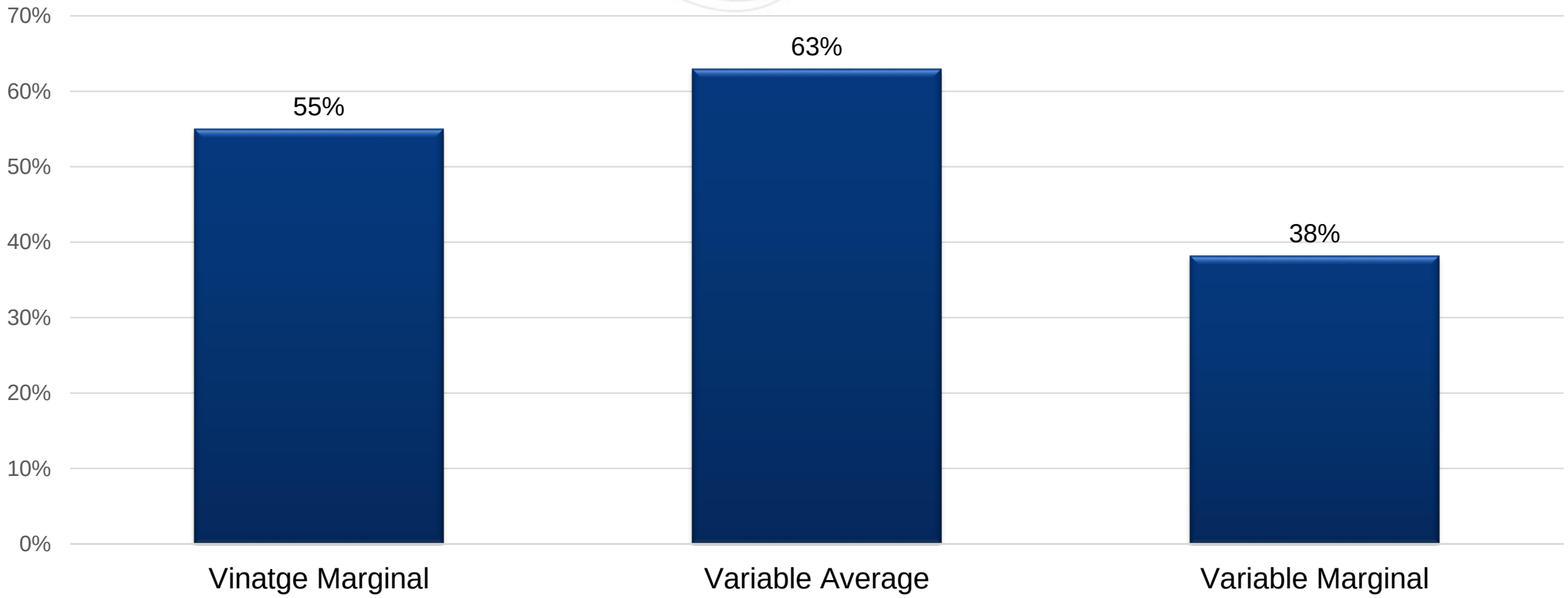
DC 2a: Timing of Class Assessment & Accreditation

Q6: Could you support a model that results in resources receiving a lower capacity value in exchange for increased predictability as to what that capacity value will be?

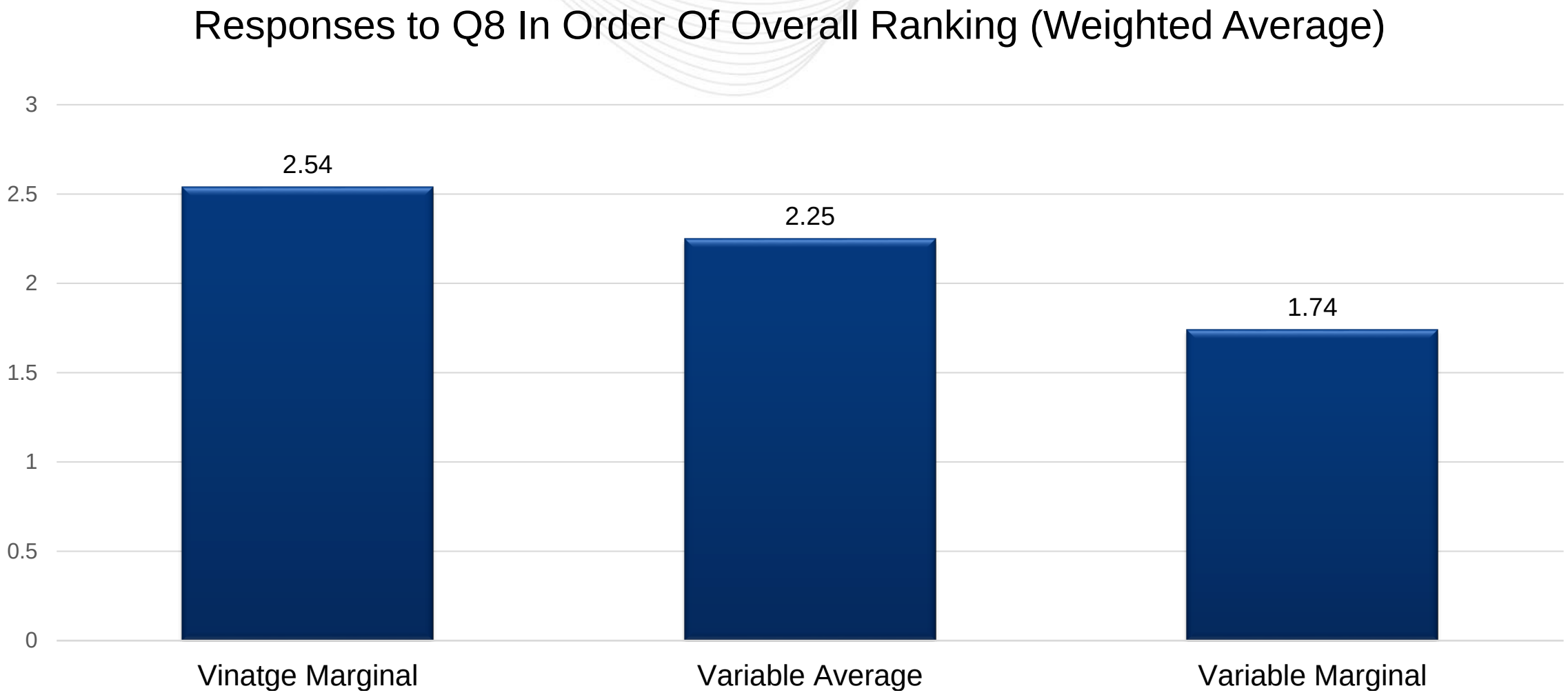
- 69% responded Yes
- 31% responded No

DC 3: Considerations of a Changing ELCC

Q7: Conceptual Approaches to Design Component “Considerations of a Changing ELCC” that Stakeholders Can Support



DC 3: Considerations of a Changing ELCC



DC 3: Considerations of a Changing ELCC

Q9: If you cannot support option I above ("**vintage marginal**"), could you support it if the ClassELCC% for a resource were only fixed for a certain number of years, after which the ClassELCC% value would change?

- 68% responded Yes
- 14% responded No
- 18% responded N/A

DC 3: Considerations of a Changing ELCC

Q10: If you cannot support option II above ("**variable average**"), could you support it if there were a certain number of years of certainty in Class% accreditation values available (i.e., each of the next X years would have a guaranteed accreditation value, which may have a different value from one year to the next)?

- 64% responded Yes
- 12% responded No
- 24% responded N/A

DC 3: Considerations of a Changing ELCC

Q11: If you cannot support option III above ("**variable marginal**"), could you support it if there were a certain number of years of certainty in Class% accreditation values available (i.e., each of the next X years would have a guaranteed accreditation value, which may have a different value from one year to the next)?

- 48% responded Yes
- 35% responded No
- 17% responded N/A

DC 3: Considerations of a Changing ELCC

Q12: Should an interconnected resource have the ability to maintain its current capacity capability, assuming the resource has good performance?

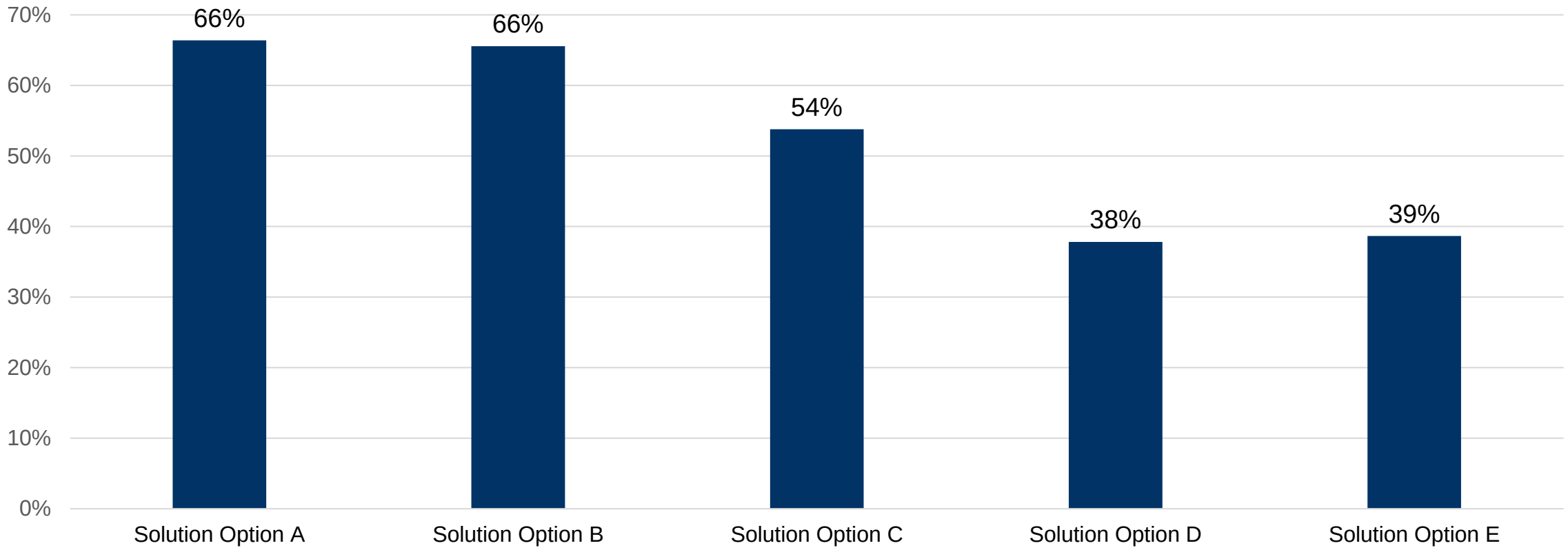
- 66% responded Yes
- 34% responded No

DC 3: Performance Adjustment – Intermittent Resources

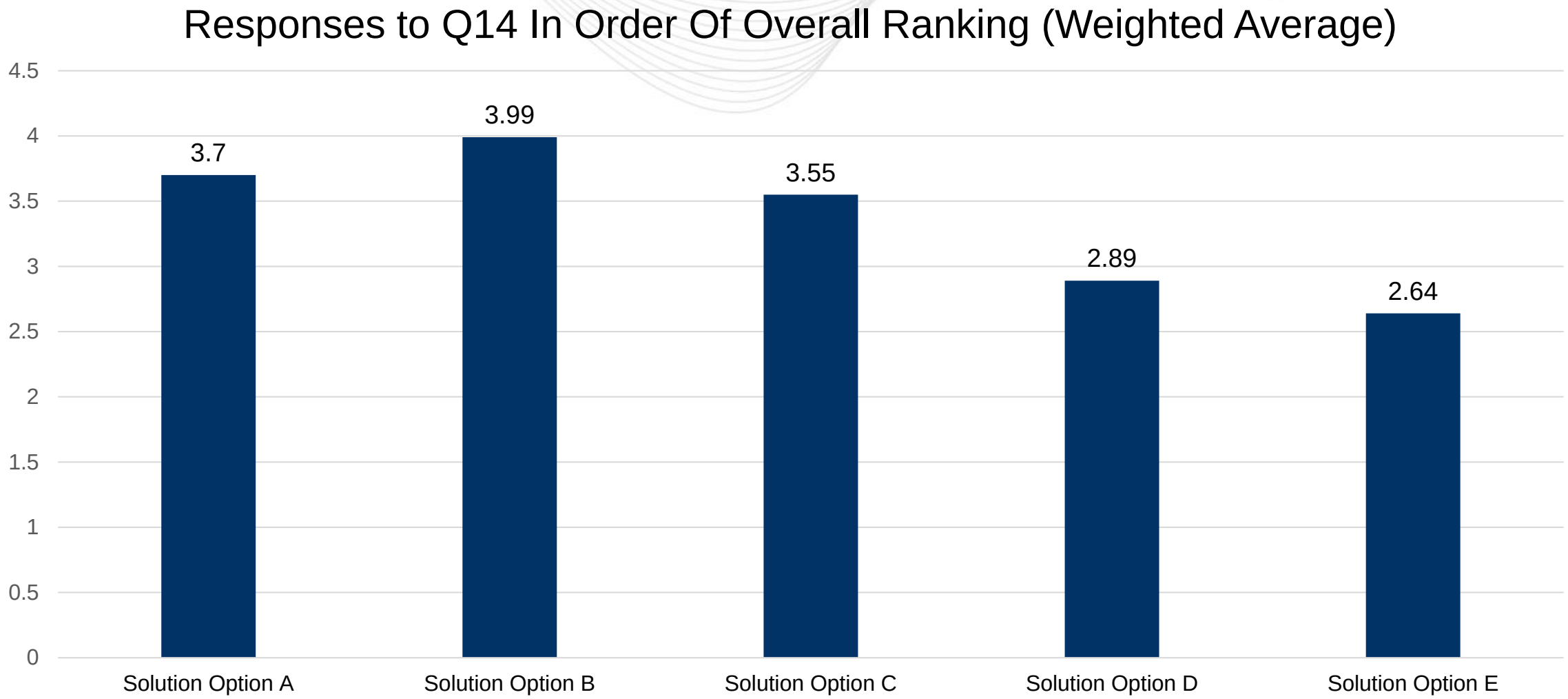
Performance Adjustment Options for Intermittent Resources
Solution Option A: a unit is allocated a pro rata share of the total class ELCC based on average of output during the top X daily coincident peak windows for each of last 10 years where X (the number of coincident peak days) is the average number of days with significant LOLE in the ELCC analysis and the duration of the window is the average duration of a LOLE event from the ELCC analysis. More recent years are weighted heavier to account for expectation of slight degradation in output. The value for X and the duration of the window can be changed once every 4 years if needed.
Solution Option B: A resource may elect to prove to PJM that it will be able to perform at a higher output/availability than the general resource class modeled in the FELCC. The resource may obtain a higher FELCC to CIR value if it produces evidence of why it is technically superior to the technology type in the general FELCC calculation. The method to maintain your CIR will not change once your accreditation and the peak hours for demonstrating capability are assigned.
Solution Option C: The Performance Adjustment is based on the ratio of the unit's performance metric to the class average performance metric. The performance metric is the average of the actual or backcasted output of a resource during the 200CP “gross load” hours and the 200CP “putative net load” hours of the last 10 years, regardless of the year or day these hours fall in. “Gross load” is actual PJM load. “Putative net load” is the gross load minus the putative output of the Intermittent Resources that are expected to be deployed in the year that the ELCC analysis is actually run.
Solution Option D: Average output during the 8 daily coincident peak hours of the last 10+ years (similar to the approach MISO takes).
Solution Option E: Average output during the 20 coincident peak hours of the last 10+ years.

DC 3: Performance Adjustment – Intermittent Resources

Q13: Options For "Intermittent Resources", Design Component 3 that Stakeholders Can Support



DC 3: Performance Adjustment – Intermittent Resources



Appendix

1. Which solutions options in the "limited duration resources" design component could you support? (Please select one or more options.)

	#	%
Solution A: 6 hour and 10 hour energy storage resources, 6 hour and 10 hour generic limited duration resources; Linear derating allowed for ESR and limited duration resources.	112	47%
Solution B: 4 hour and 10 hour storage; units between 4-10 hrs can qualify for either class.	154	65%
Solution C: Model multiple classes (e.g., by hour) up to X-hr, where X is the duration expected to retain 100% capacity value over the study window.	112	47%
Solution D: 4 hour, 6 hour, and 10 hour energy storage resources; Allow derating along a curve.	195	82%
Solution E: Energy Limited resources, power limited resources.	60	25%
Solution F: 2 hour and 4 hour energy storage resources. Allow derating along a curve.	82	34%
None of the above.	1	0%

2. Please rank the solutions options in the "limited duration resources" design component, where "1" is your most preferred option.

	1	2	3	4	5	6	N/A	Wtd. Avg.
Solution A: 6 hour and 10 hour energy storage resources, 6 hour and 10 hour generic limited duration resources; Linear derating allowed for ESR and limited duration resources.	79	0	44	34	18	19	44	4.16
	33%	0%	18%	14%	8%	8%	18%	
Solution B: 4 hour and 10 hour storage; units between 4-10 hrs can qualify for either class.	25	37	89	15	46	2	24	3.88
	11%	16%	37%	6%	19%	1%	10%	
Solution C: Model multiple classes (e.g., by hour) up to X-hr, where X is the duration expected to retain 100% capacity value over the study window.	21	49	48	46	0	0	74	4.27
	9%	21%	20%	19%	0%	0%	31%	
Solution D: 4 hour, 6 hour, and 10 hour energy storage resources; Allow derating along a curve.	98	85	12	14	0	7	22	5.14
	41%	36%	5%	6%	0%	3%	9%	
Solution E: Energy Limited resources, power limited resources.	0	49	8	1	46	6	128	3.44
	0%	21%	3%	0%	19%	3%	54%	
Solution F: 2 hour and 4 hour energy storage resources. Allow derating along a curve.	15	18	8	57	1	54	85	2.87
	6%	8%	3%	24%	0%	23%	36%	

3. (Note: for the purposes of this question, Solution C includes the presence of a 4-hour class, and Solution E does not include the presence of a 4-hour class.) Is your support for a given solution option in Question 1 contingent on:

	#	%
The presence of a 4-hour class (including solution C)?	123	52%
The absence of a 4-hour class?	35	15%
Neither.	80	34%

5. Understanding that there is a link between uncertainty in the future resource mix and uncertainty in future ClassELCC% values, and that there are tradeoffs among A) the ability of a resource to retain its initial ClassELCC% value, B) certainty in future ClassELCC% values, and C) the level of conservatism in the ClassELCC% values that PJM publishes for accreditation purposes--please rank the following aspects in order of importance, where "1" is the most important option.

	1	2	3	Wtd. Avg.
Ability to retain the same ClassELCC% value over time	56	61	121	1.73
	24%	26%	51%	
Having a predictable ClassELCC% capacity value over time, even if different years have different values	143	95	0	2.60
	60%	40%	0%	
Having the possibility of a higher ClassELCC%, even if it is uncertain ahead of time	39	82	117	1.67
	16%	34%	49%	

6. Could you support a model that results in resources receiving a lower capacity value in exchange for increased predictability as to what that capacity value will be?

	#	%
Yes	164	69%
No	74	31%

7. Which of the following conceptual approaches to the design component "considerations of a changing ELCC" can you support? (Please select one or more options.)

	#	%
A "vintage-marginal" approach, in which the ClassELCC% for a resource is fixed at the marginal ELCC% value calculated for the year they reach an initial milestone (such as first being eligible to offer into a Capacity auction). (Solution Options C&D)	130	55%
A "variable average" approach, in which the ClassELCC% for all resources is updated each year based on a new ELCC analysis, using the "average ELCC%" result (i.e., Total Class ELCCMW divided by Total Class ICAP or Total Class Maximum Facility Output, as applicable). This would provide minimal forward predictability of ClassELCC% values used for accreditation, but could provide indicative, non-binding values for future years. (Solution Options A&B).	149	63%
A "variable marginal" approach, in which the ClassELCC% for all resources is updated each year based on a new ELCC analysis, using the "marginal ELCC%" result (i.e., ELCCMW of an additional increment of a resource in the class divided by ICAP or Maximum Facility Output of that increment, as applicable). This would provide minimal forward predictability of ClassELCC% values used for accreditation, but could provide indicative, non-binding values for future years. (Note: this concept is not currently in the matrix, but has been discussed during the CCSTF meetings).	91	38%

8. Please rank the following conceptual approaches to the design component "considerations of a changing ELCC", where "1" is the most important option.

	1	2	3	N/A	Wtd. Avg.
A "vintage-marginal" approach, in which the ClassELCC% for a resource is fixed at the marginal ELCC% value calculated for the year they reach an initial milestone (such as first being eligible to offer into a Capacity auction). (Solution Options C&D)	119	16	30	73	2.54
	50%	7%	13%	31%	
A "variable average" approach, in which the ClassELCC% for all resources is updated each year based on a new ELCC analysis, using the "average ELCC%" result (i.e., Total Class ELCCMW divided by Total Class ICAP or Total Class Maximum Facility Output, as applicable). This would provide minimal forward predictability of ClassELCC% values used for accreditation, but could provide indicative, non-binding values for future years. (Solution Options A&B).	86	57	40	55	2.25
	36%	24%	17%	23%	
A "variable marginal" approach, in which the ClassELCC% for all resources is updated each year based on a new ELCC analysis, using the "marginal ELCC%" result (i.e., ELCCMW of an additional increment of a resource in the class divided by ICAP or Maximum Facility Output of that increment, as applicable). This would provide minimal forward predictability of ClassELCC% values used for accreditation, but could provide indicative, non-binding values for future years. (Note: this concept is not currently in the matrix, but has been discussed during the CCSTF meetings).	17	70	54	97	1.74
	7%	29%	23%	41%	

9. If you cannot support option I above ("vintage-marginal"), could you support it if the ClassELCC% for a resource were only fixed for a certain number of years, after which the ClassELCC% value would change?

	#	%
Yes	163	68%
No	33	14%
N/A	42	18%

10. If you cannot support option II above ("variable average"), could you support it if there were a certain number of years of certainty in Class% accreditation values available (i.e., each of the next X years would have a guaranteed accreditation value, which may have a different value from one year to the next)?

	#	%
Yes	153	64%
No	28	12%
N/A	57	24%

11. If you cannot support option III above ("variable marginal"), could you support it if there were a certain number of years of certainty in Class% accreditation values available (i.e., each of the next X years would have a guaranteed accreditation value, which may have a different value from one year to the next)?

	#	%
Yes	114	48%
No	84	35%
N/A	40	17%

12. Should an interconnected resource have the ability to maintain its current capacity capability, assuming the resource has good performance?

	#	%
Yes	158	66%
No	80	34%

13. Which solutions options in the "Performance adjustment – Intermittent Resources" design component could you support? (Please select one or more options.)

	#	%
For Intermittent Resources: a unit is allocated a pro rata share of the total class ELCC based on average of output during the top X daily coincident peak windows for each of last 10 years where X (the number of coincident peak days) is the average number of days with significant LOLE in the ELCC analysis and the duration of the window is the average duration of a LOLE event from the ELCC analysis. More recent years are weighted heavier to account for expectation of slight degradation in output. The value for X and the duration of the window can be changed once every 4 years if needed.	158	66%
A resource may elect to prove to PJM that it will be able to perform at a higher output/availability than the general resource class modeled in the FELCC. The resource may obtain a higher FELCC to CIR value if it produces evidence of why it is technically superior to the technology type in the general FELCC calculation. The method to maintain your CIR will not change once your accreditation and the peak hours for demonstrating capability are assigned.	156	66%
The Performance Adjustment is based on the ratio of the unit's performance metric to the class average performance metric. The performance metric is the average of the actual or backcasted output of a resource during the 200CP “gross load” hours and the 200CP “putative net load” hours of the last 10 years, regardless of the year or day these hours fall in. “Gross load” is actual PJM load. “Putative net load” is the gross load minus the putative output of the Intermittent Resources that are expected to be deployed in the year that the ELCC analysis is actually run.	128	54%
Average output during the 8 daily coincident peak hours of the last 10+ years (similar to the approach MISO takes).	90	38%
Average output during the 20 coincident peak hours of the last 10+ years.	92	39%

14. For the solutions that you can support for the "Performance adjustment - Intermittent Resources" design component, please rank the solutions, where #1 would be your top preference.

	1	2	3	4	5	N/A	Wtd. Avg.
For Intermittent Resources: a unit is allocated a pro rata share of the total class ELCC based on average of output during the top X daily coincident peak windows for each of last 10 years where X (the number of coincident peak days) is the average number of days with significant LOLE in the ELCC analysis and the duration of the window is the average duration of a LOLE event from the ELCC analysis. More recent years are weighted heavier to account for expectation of slight degradation in output. The value for X and the duration of the window can be changed once every 4 years if needed.	74	32	25	0	33	74	3.70
	31%	13%	11%	0%	14%	31%	
A resource may elect to prove to PJM that it will be able to perform at a higher output/availability than the general resource class modeled in the FELCC. The resource may obtain a higher FELCC to CIR value if it produces evidence of why it is technically superior to the technology type in the general FELCC calculation. The method to maintain your CIR will not change once your accreditation and the peak hours for demonstrating capability are assigned.	69	34	14	16	8	97	3.99
	29%	14%	6%	7%	3%	41%	
The Performance Adjustment is based on the ratio of the unit's performance metric to the class average performance metric. The performance metric is the average of the actual or backcasted output of a resource during the 200CP “gross load” hours and the 200CP “putative net load” hours of the last 10 years, regardless of the year or day these hours fall in. “Gross load” is actual PJM load. “Putative net load” is the gross load minus the putative output of the Intermittent Resources that are expected to be deployed in the year that the ELCC analysis is actually run.	63	31	25	33	16	70	3.55
	26%	13%	11%	14%	7%	29%	
Average output during the 8 daily coincident peak hours of the last 10+ years (similar to the approach MISO takes).	14	30	29	23	24	118	2.89
	6%	13%	12%	10%	10%	50%	
Average output during the 20 coincident peak hours of the last 10+ years.	0	28	45	47	15	103	2.64
	0%	12%	19%	20%	6%	43%	