

WREZ QRA Supply Curves

This appendix to the WREZ Phase 1 Report presents supply curves for 53 WREZ QRAs developed for the WREZ initiative (the BC_SHPD supply curve is not presented here). For each QRA, the theoretical annual energy generation in gigawatt-hours per year (GWh/yr) is plotted against the cost of generating that electricity and delivering it to the transmission system via a generation tie-line on a dollars per megawatt-hour (\$/MWh) basis. These curves show the amount of energy theoretically available from each QRA at various price points.

The data contained here do not represent a true resource assessment of the renewable energy resources of the Western Interconnection. These supply curves contain data that has been generated as part of a screening-level generation and transmission modeling exercise for the WREZ initiative. They have been analyzed in order to meet the specific needs of this project and other uses of these data might be inappropriate. Many simplifying assumptions have been made in order to produce an assessment of this scale that can be easily and realistically modeled at the screening level.

Notes on Supply Curves

1. All costs are in 2009 US dollars
2. Costs over \$250/MWh are not shown on supply curves because the vast majority of the resources have a cost of generation below this level.
3. All solar resources modeled here are dry-cooled solar thermal technology with six hours of thermal storage, the default technology assumption chosen by the WREZ ZITA group. Five other solar technologies were also modeled and can be selected by users of the WREZ Generation & Transmission Model.
4. Various economic and financial assumptions were used to generate these supply curves. These are detailed by technology in the Black & Veatch WREZ Phase 1 technical report.
5. Generation cost includes the cost of a generation tie line to deliver electricity from the plant to the transmission system. Generation tie line costs are calculated differently for different technologies. The methodologies for costing these lines are detailed in the WREZ Phase 1 Technical Report.
6. The theoretical annual generation in each QRA supply curve does not always match precisely with the theoretical annual generation for each QRA reported in the WREZ Phase 1 Report. In some cases, such as for solar thermal technology, slightly different capacity factor assumptions were used in each analysis, which cause discrepancies in their outputs.

Supply Curves

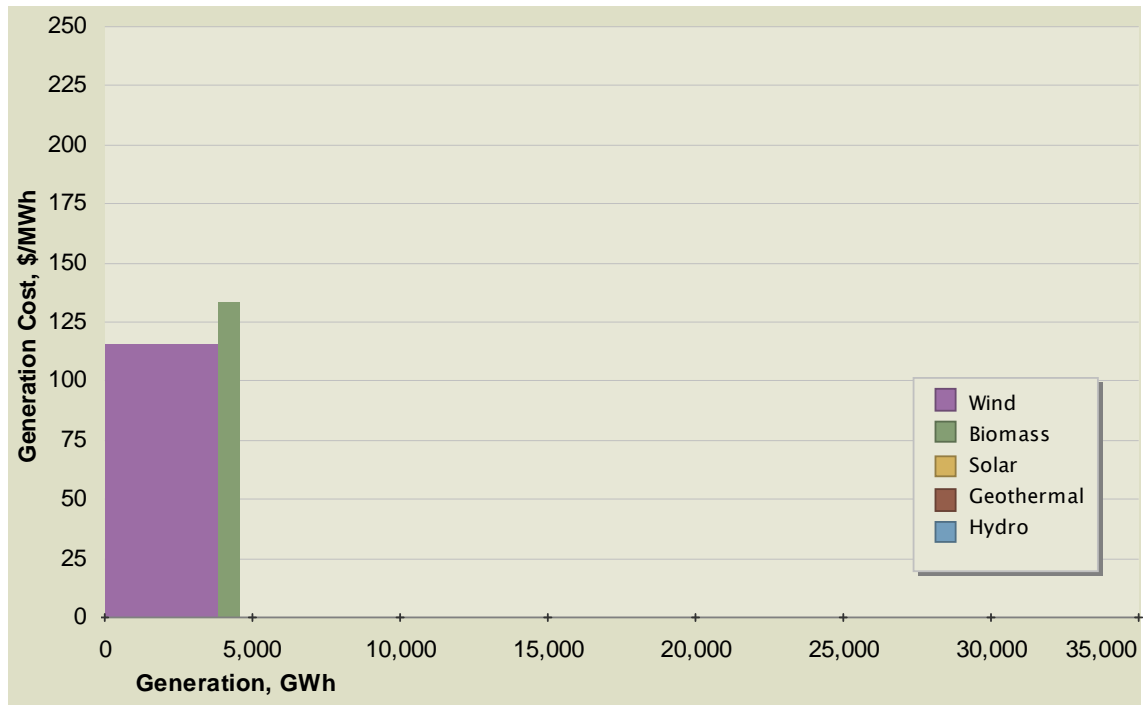


Figure A-1. AB_EA QRA Supply Curve

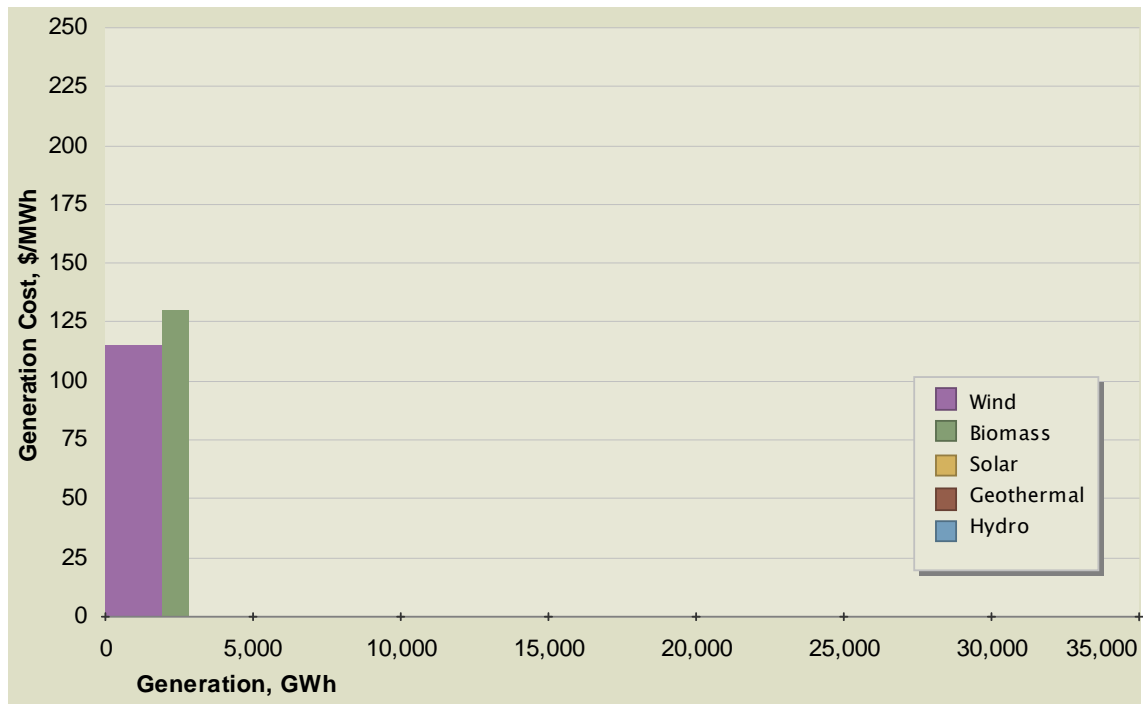


Figure A-2. AB_EC QRA Supply Curve

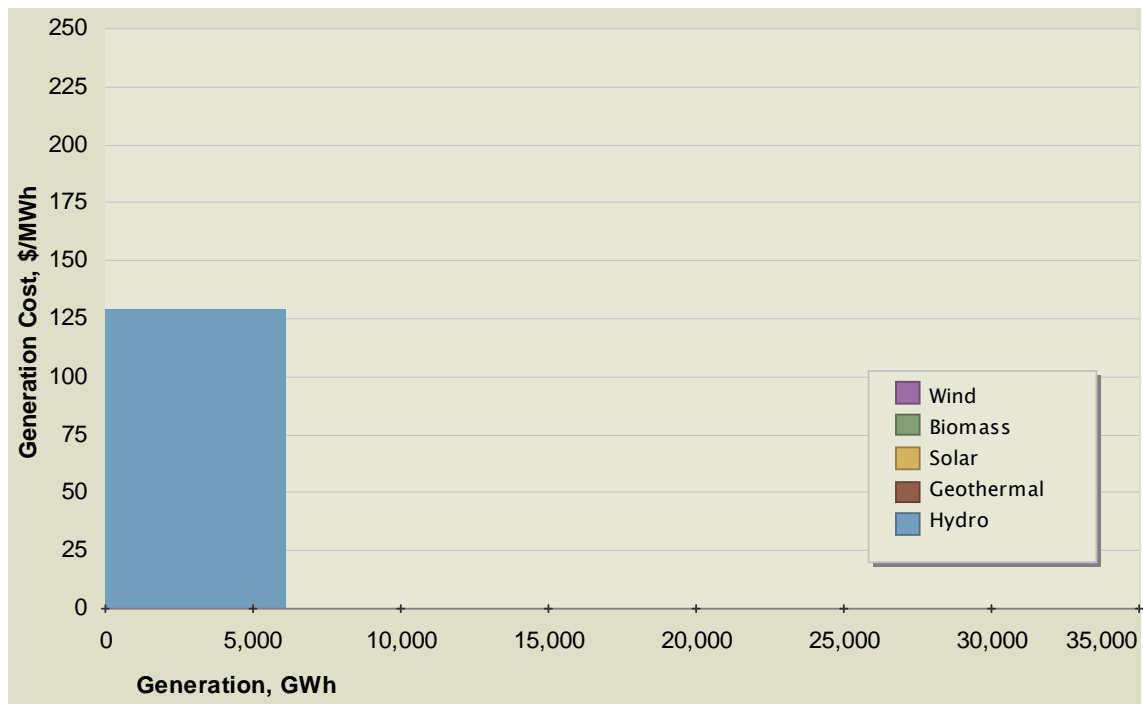


Figure A-3. AB_NO QRA Supply Curve

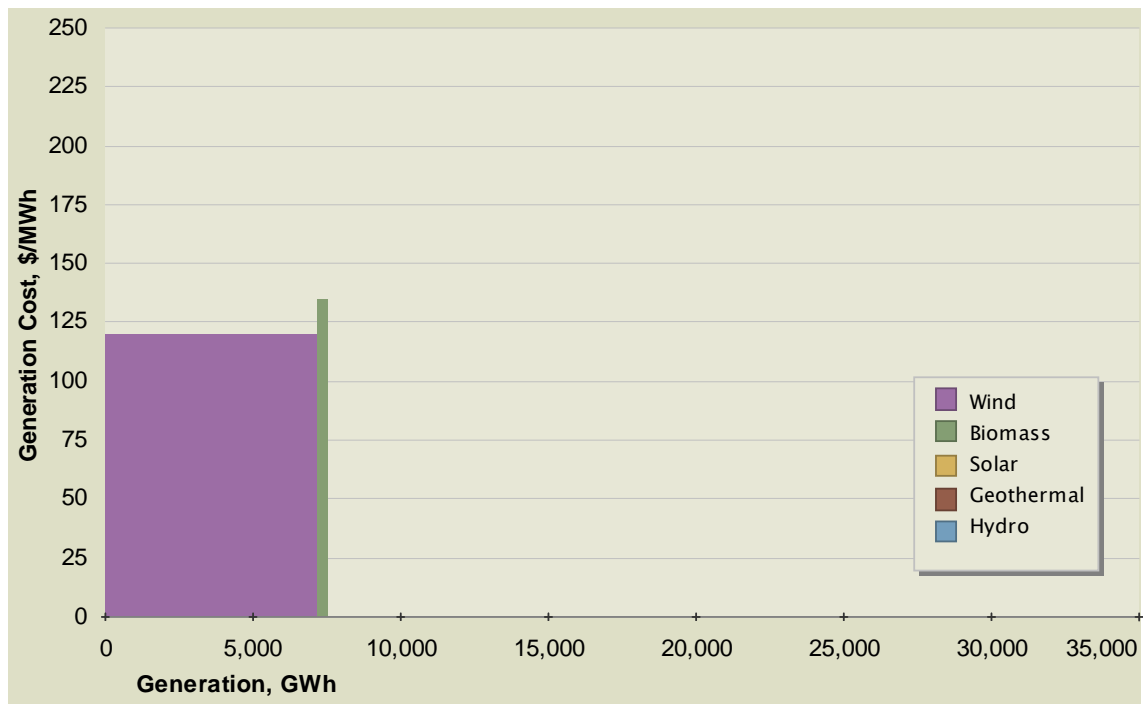


Figure A-4. AB_SE QRA Supply Curve

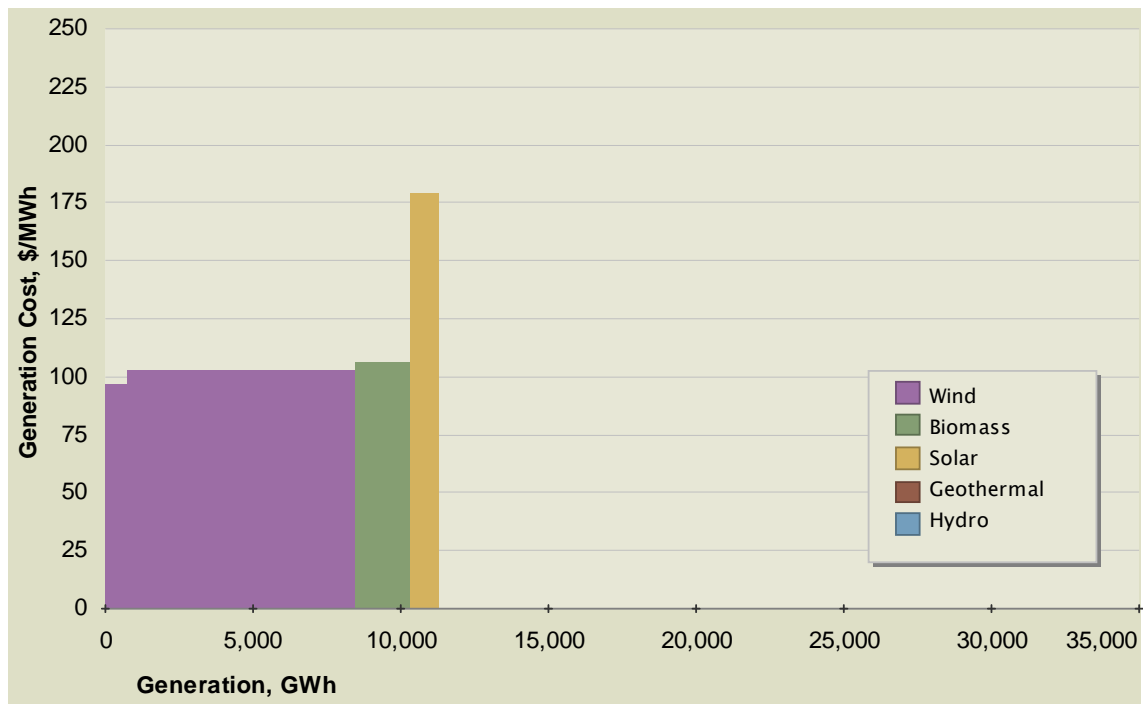


Figure A-5. AZ_NE QRA Supply Curve

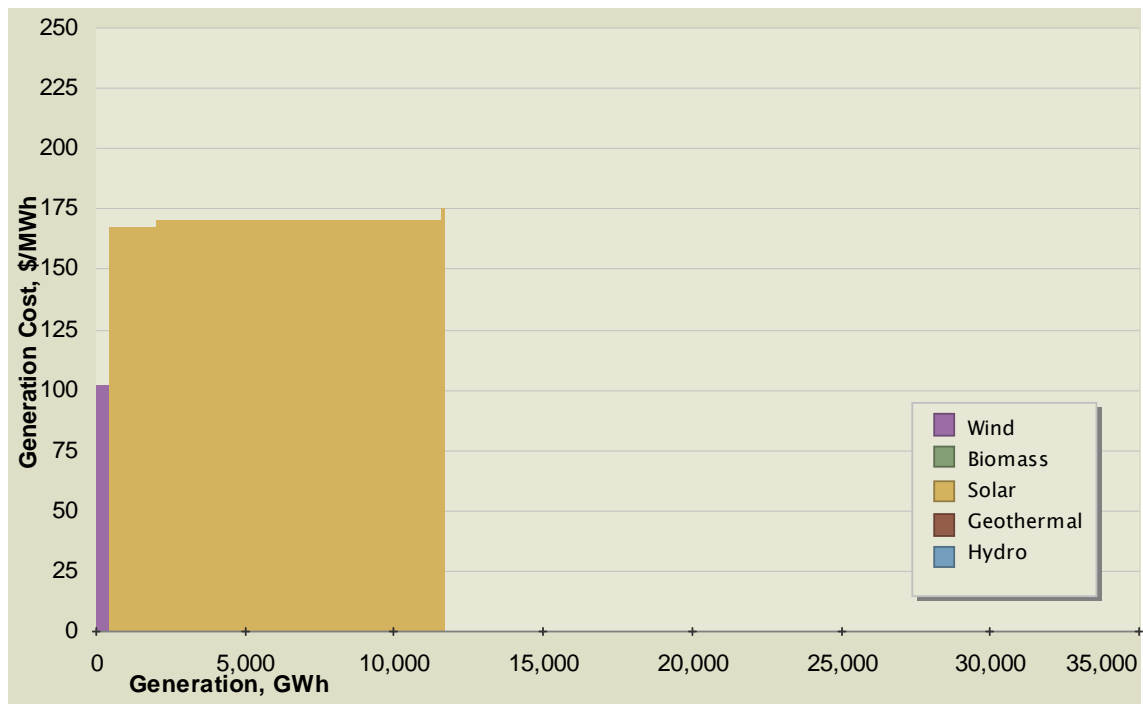


Figure A-6. AZ_NW QRA Supply Curve

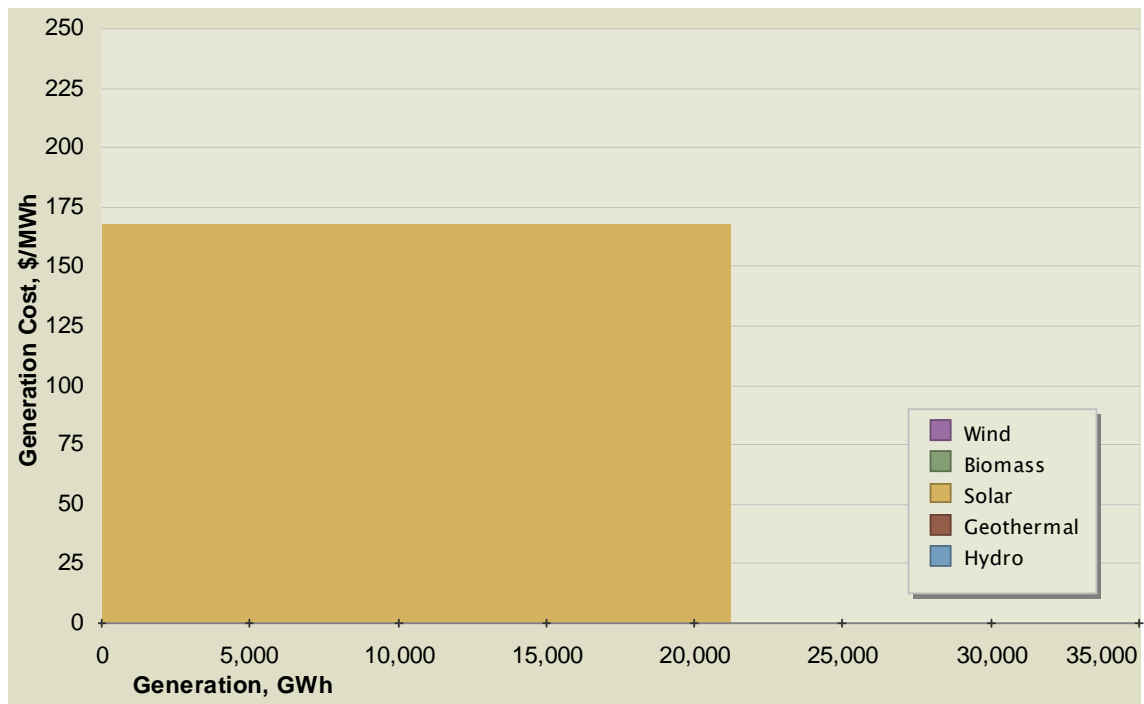


Figure A-7. AZ_SO QRA Supply Curve

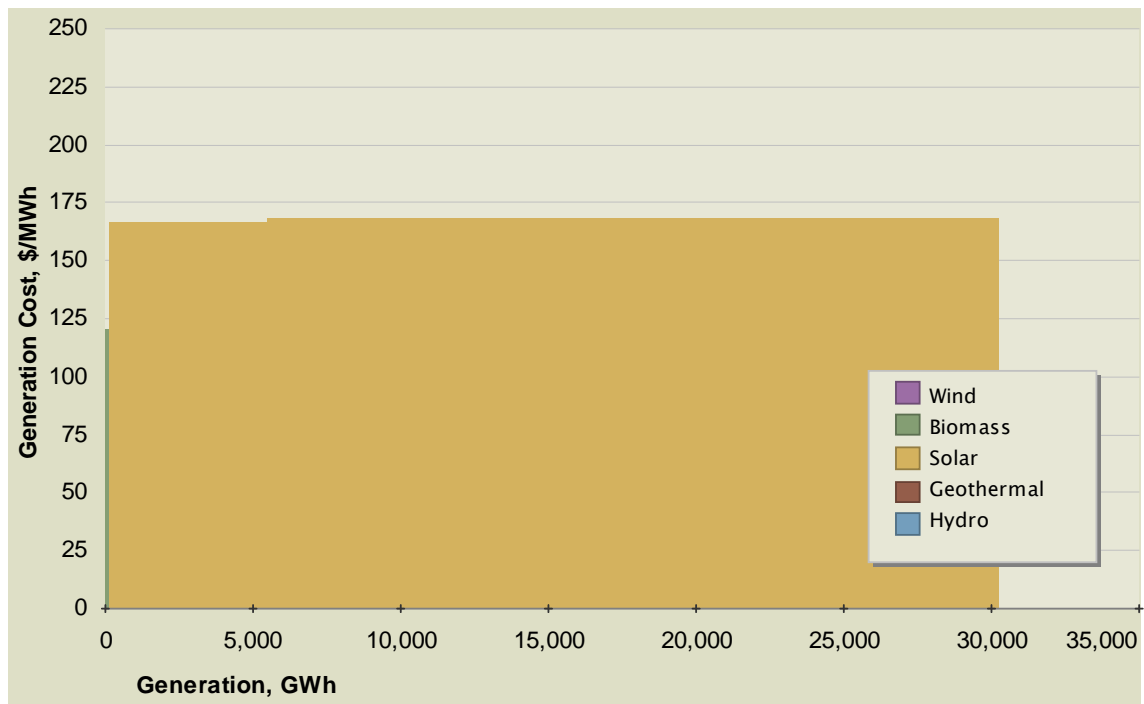


Figure A-8. AZ_WE QRA Supply Curve

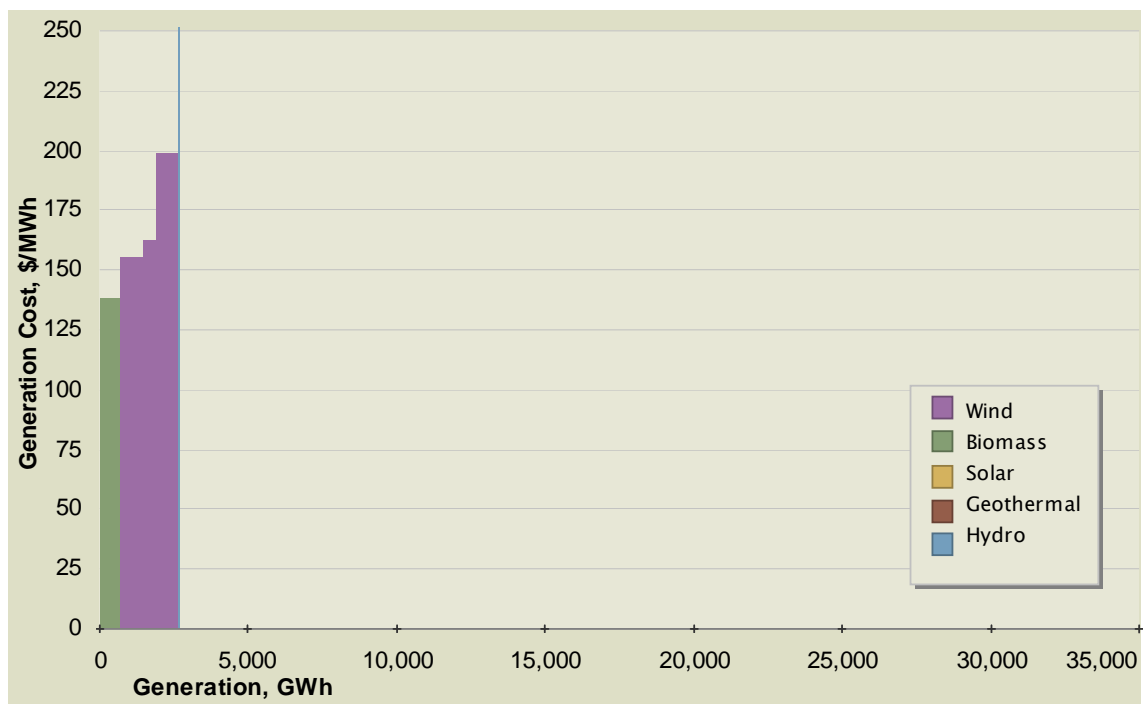


Figure A-9. BC_CT QRA Supply Curve
Generation costs over \$250/MWh not shown on chart.

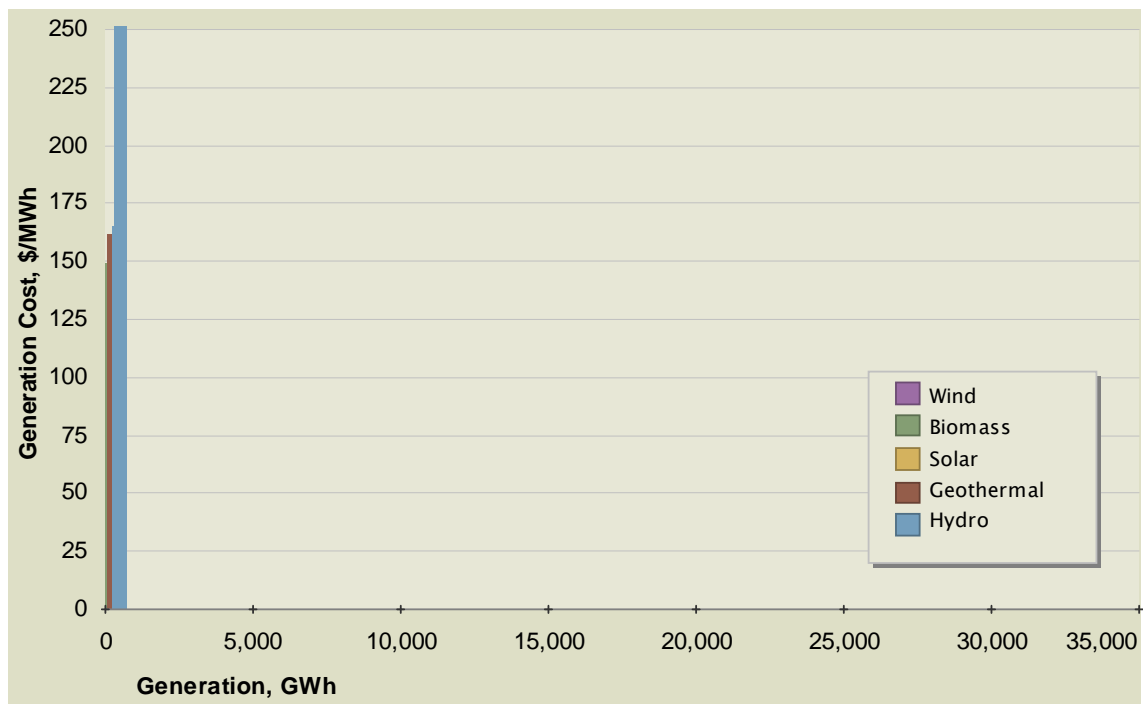


Figure A-10. BC_EA QRA Supply Curve
Generation costs over \$250/MWh not shown on chart.

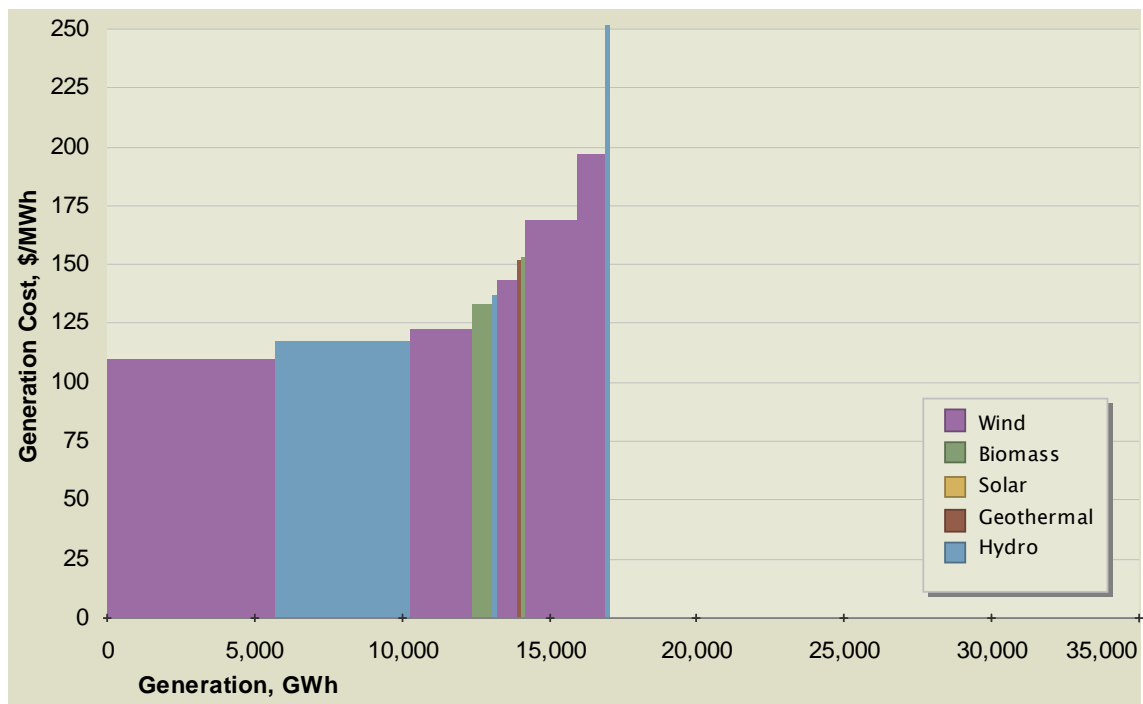


Figure A-11. BC_NE QRA Supply Curve.
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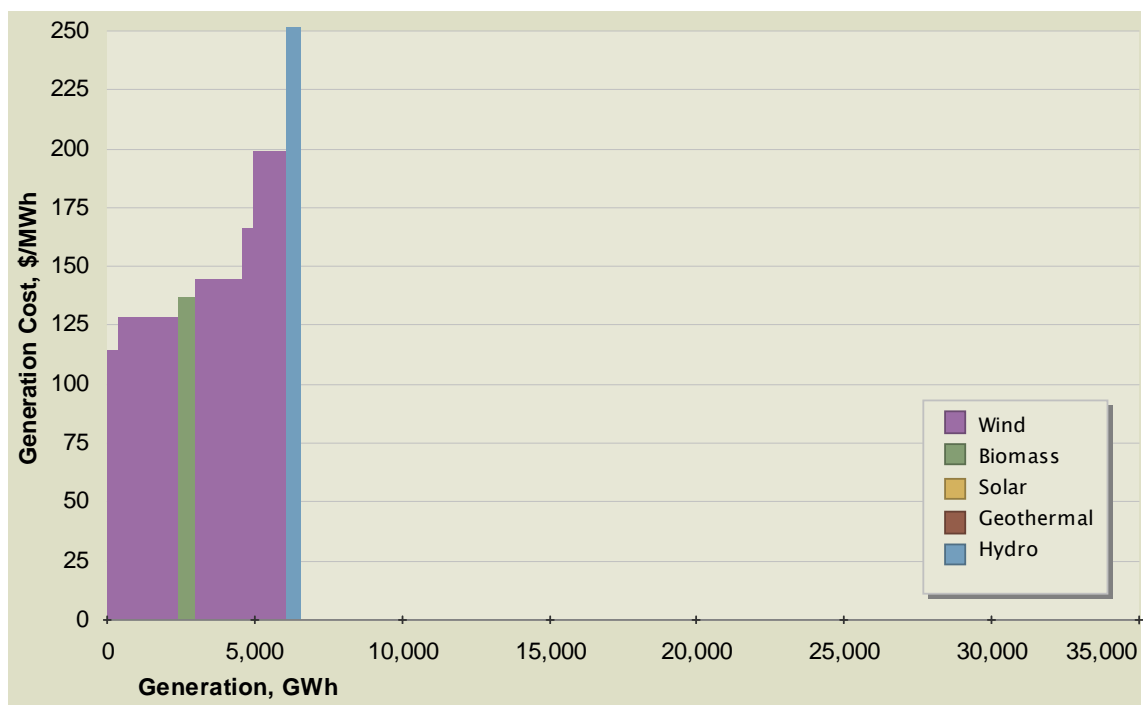


Figure A-12. BC_NO QRA Supply Curve.
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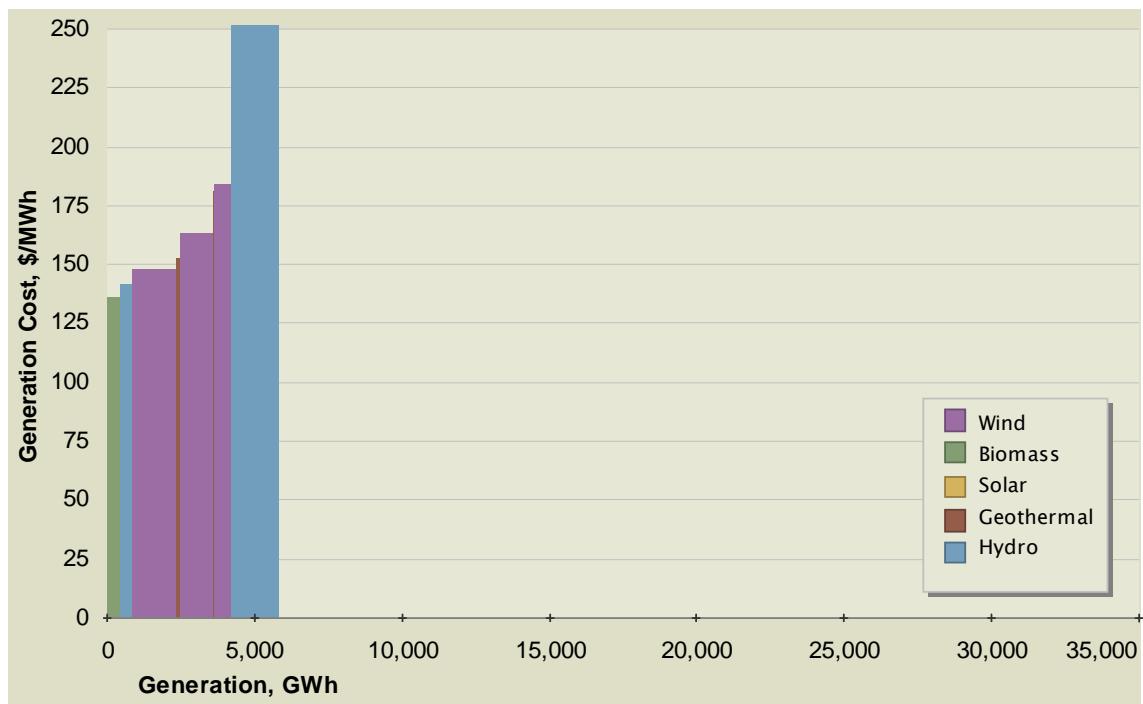


Figure A-13. BC_NW QRA Supply Curve.
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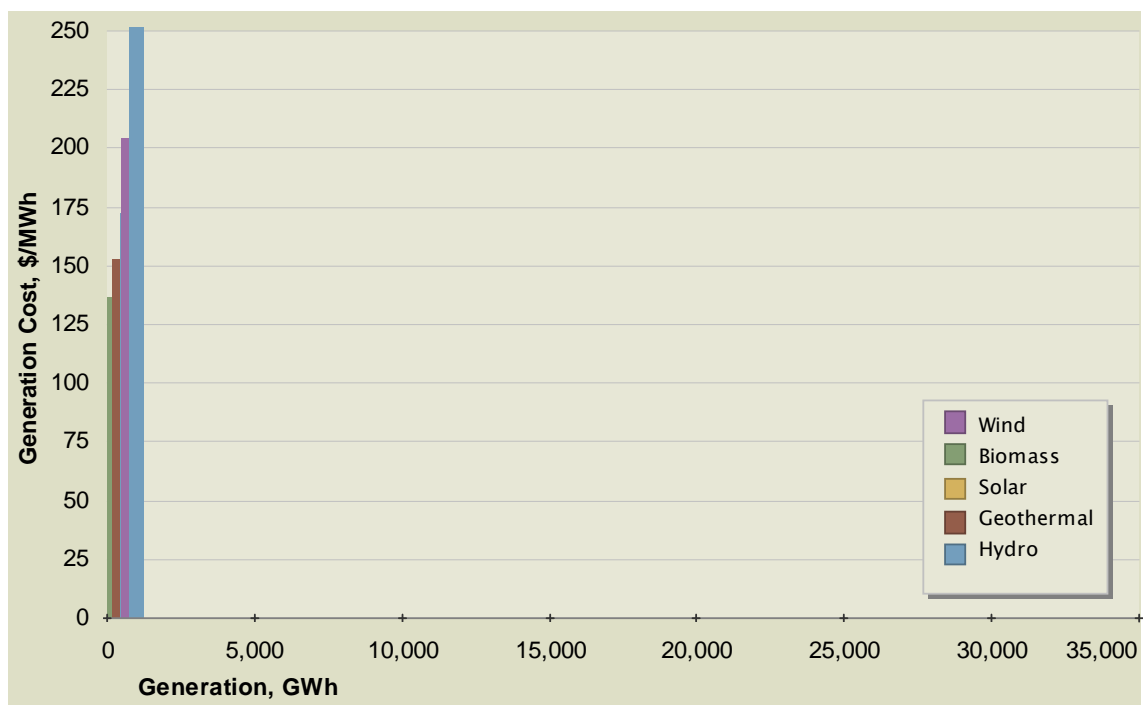


Figure A-14. BC_SE QRA Supply Curve.
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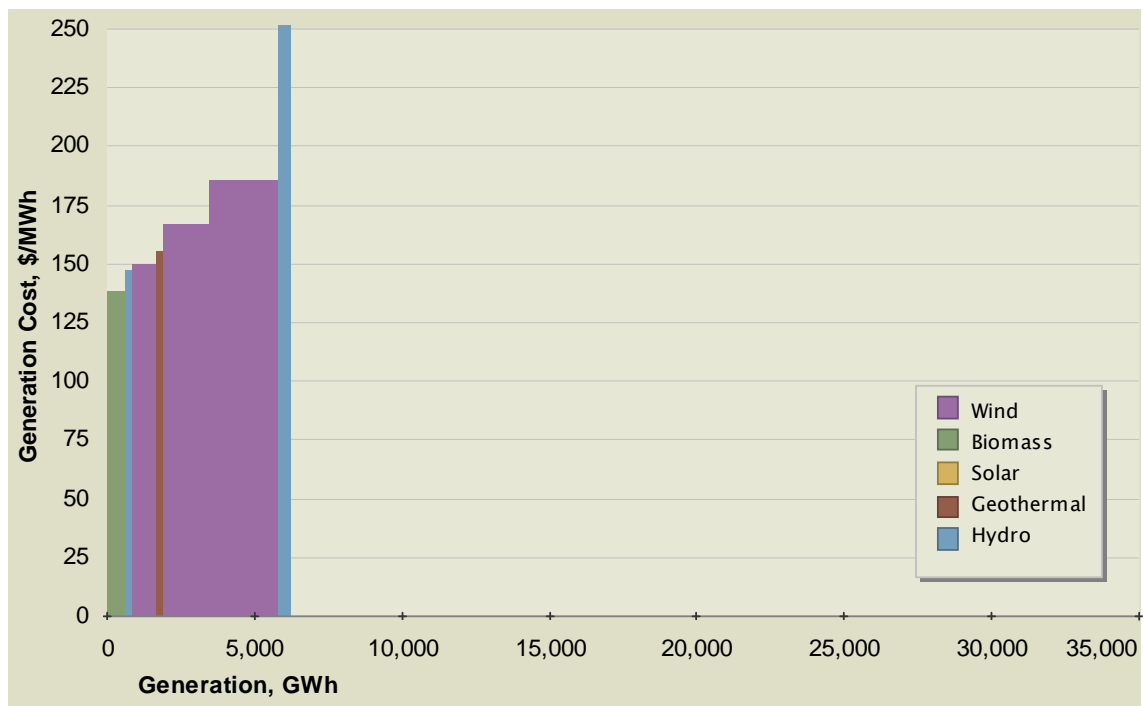


Figure A-15. BC_SO QRA Supply Curve.
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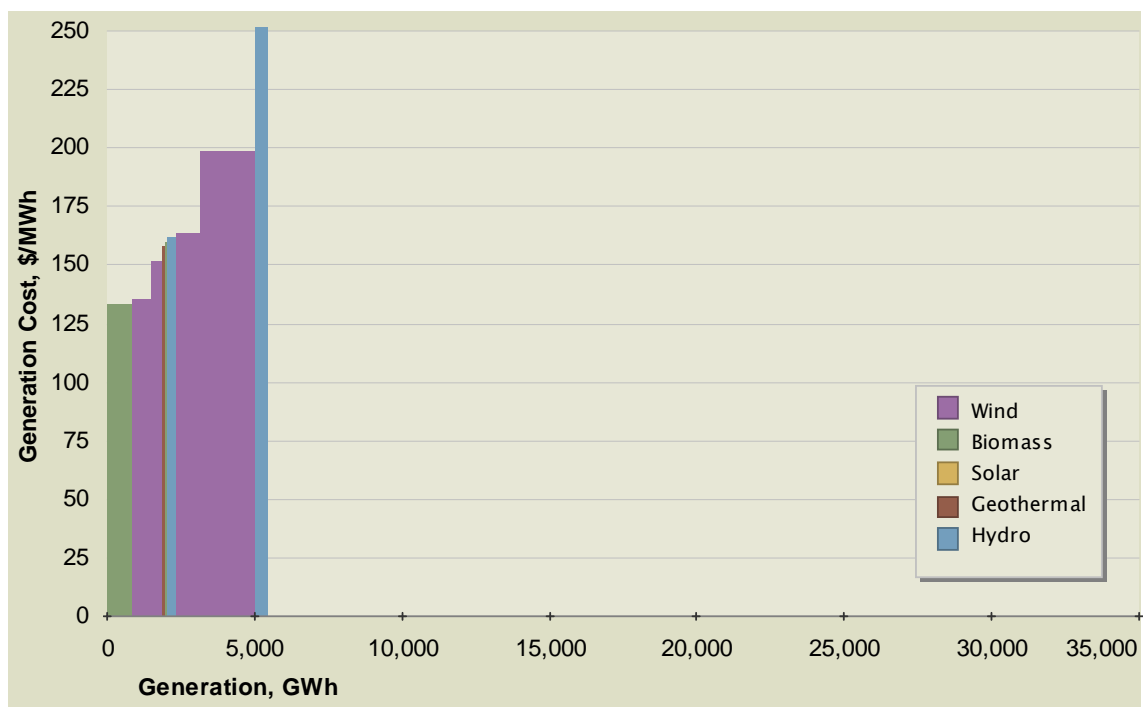


Figure A-16. BC_SW QRA Supply Curve.
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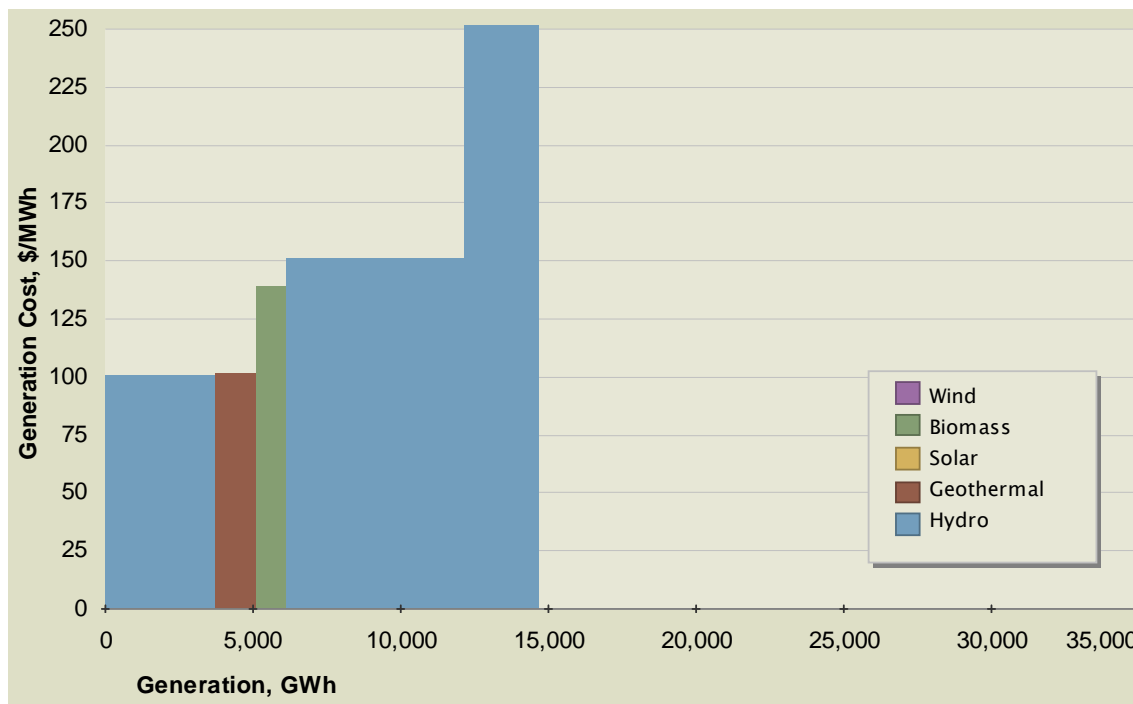


Figure A-17. BC_WC QRA Supply Curve.
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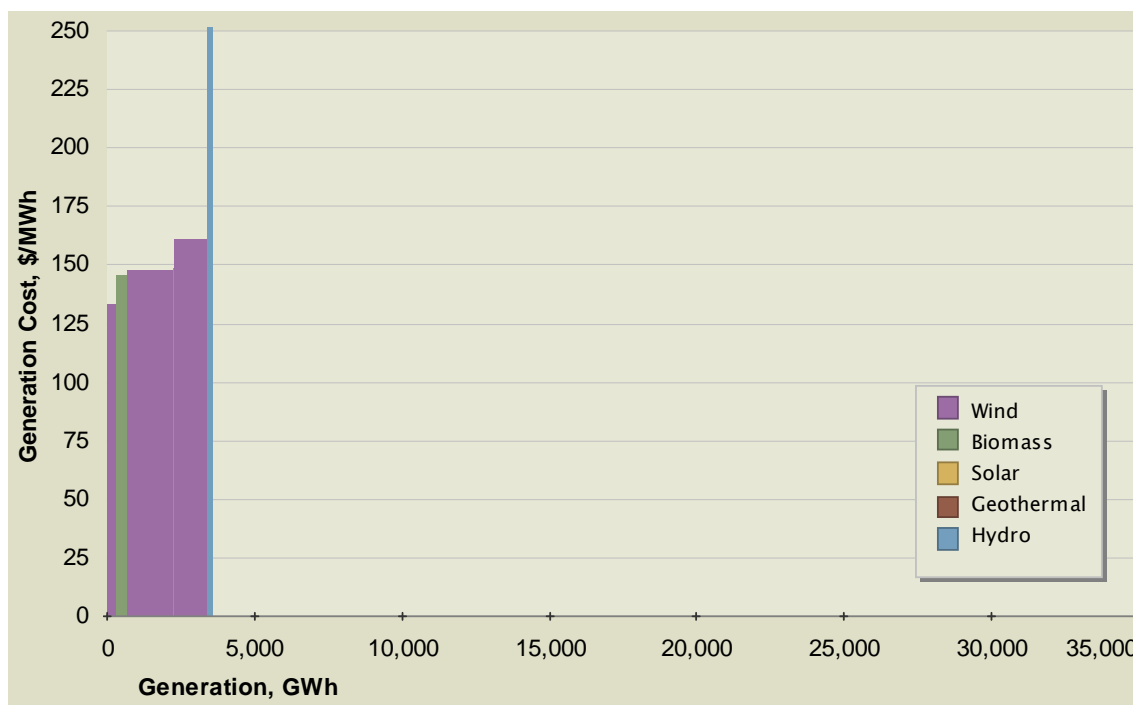


Figure A-18. BC_WE QRA Supply Curve.
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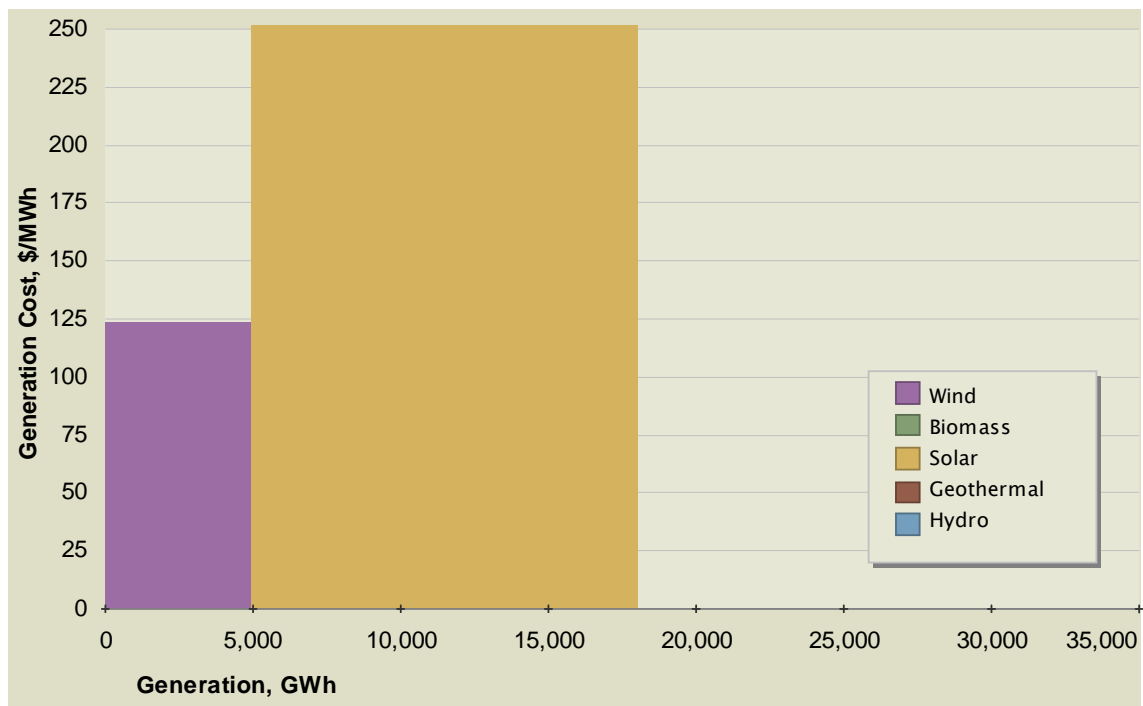


Figure A-19. BJ_NO QRA Supply Curve.
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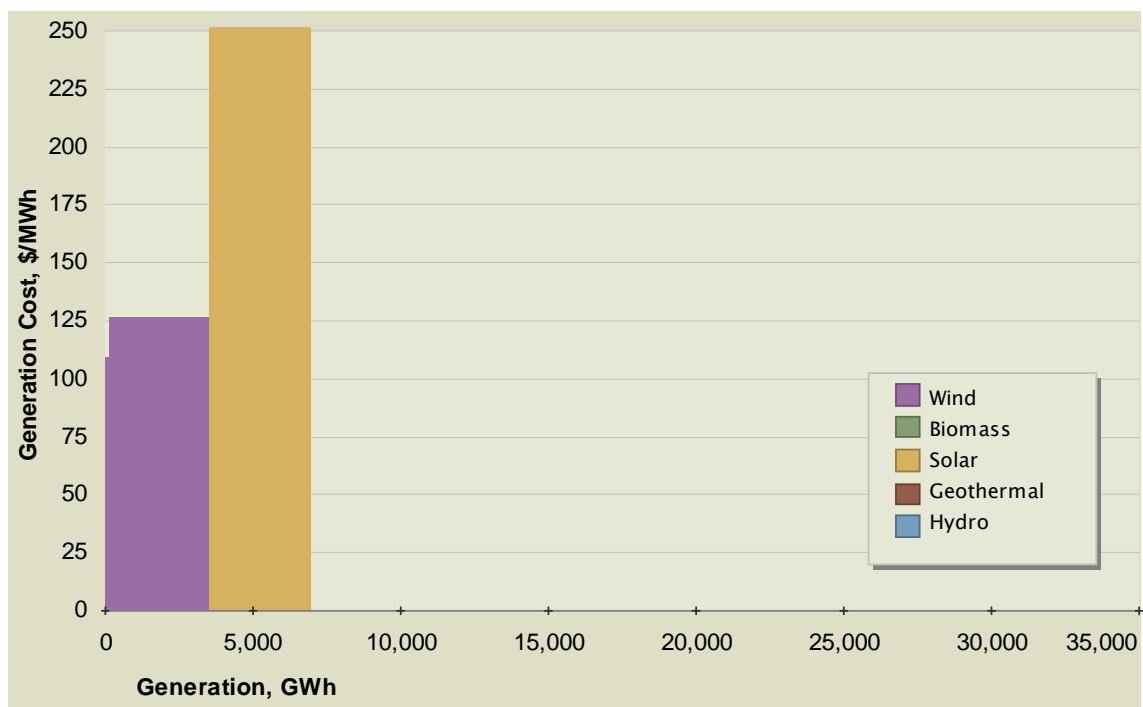


Figure A-20. BJ_SO QRA Supply Curve.
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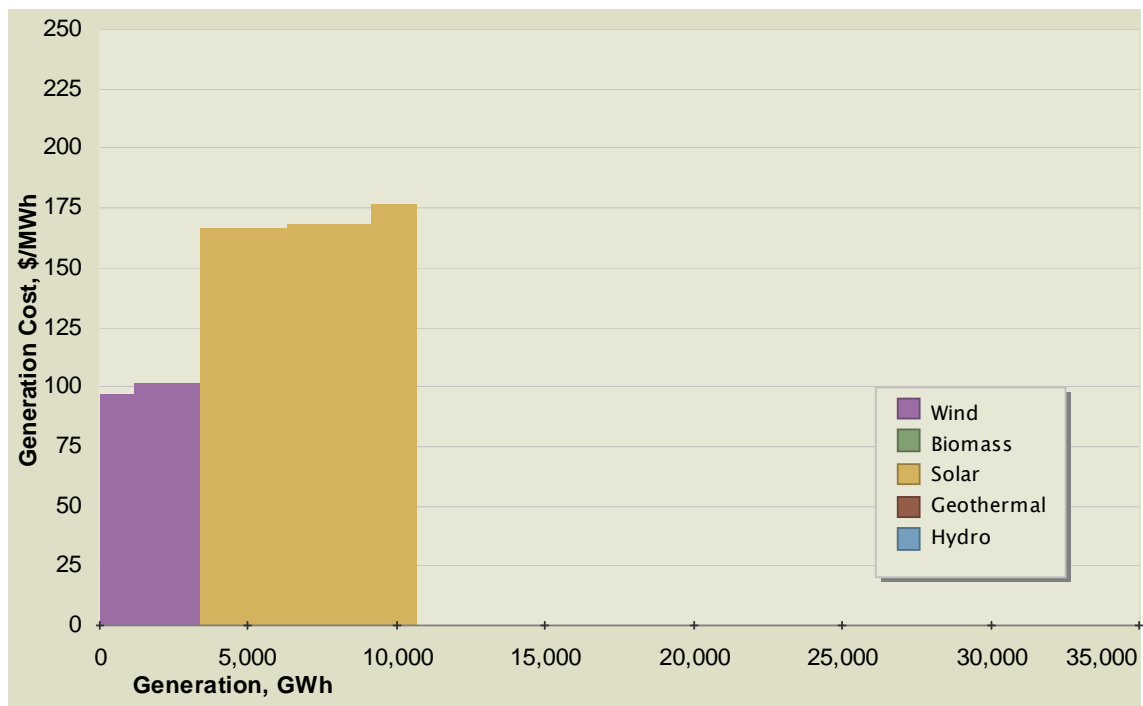


Figure A-21. CA_CT QRA Supply Curve.

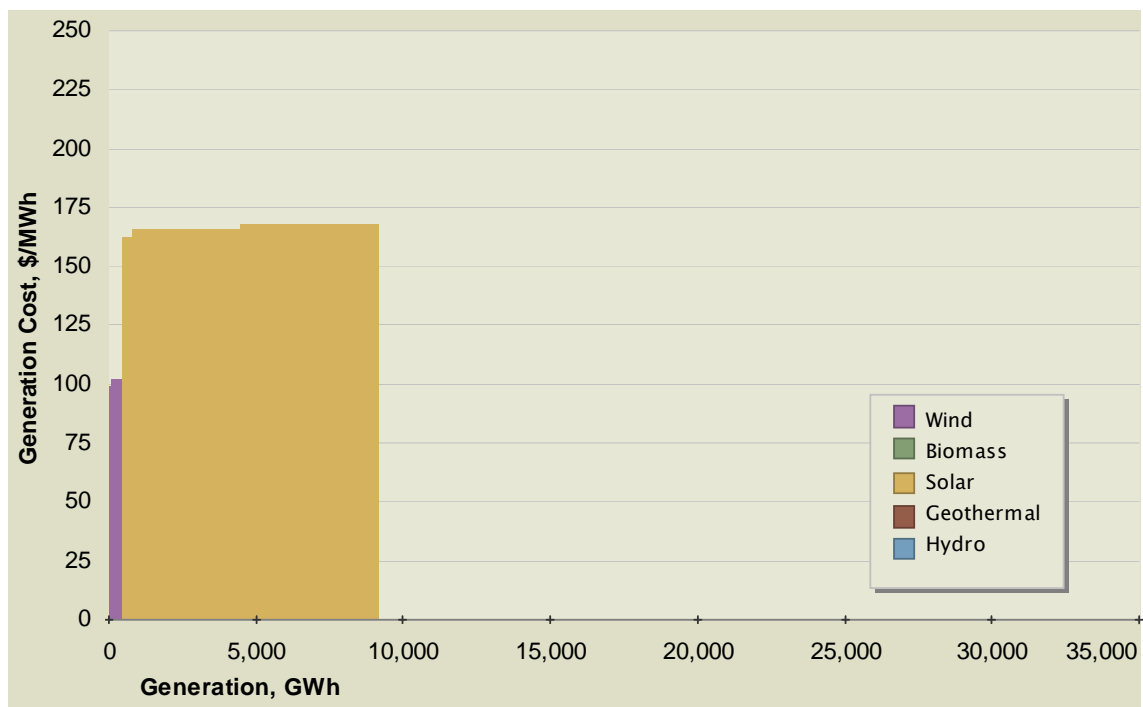


Figure A-22. CA_EA QRA Supply Curve.

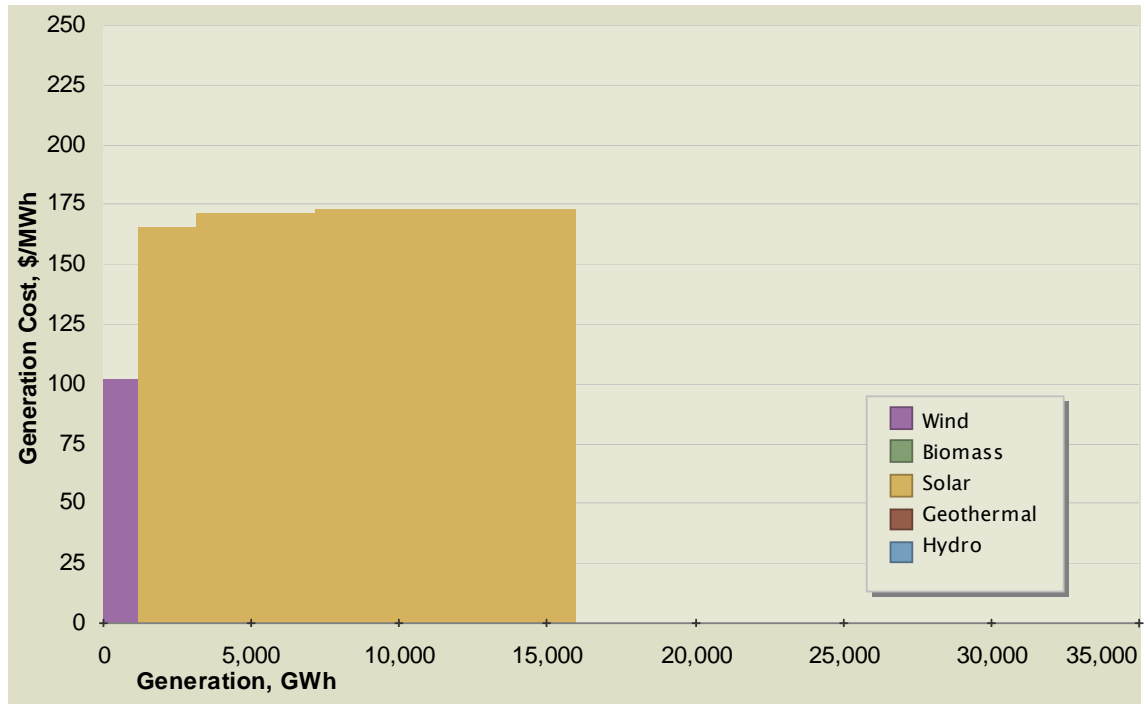


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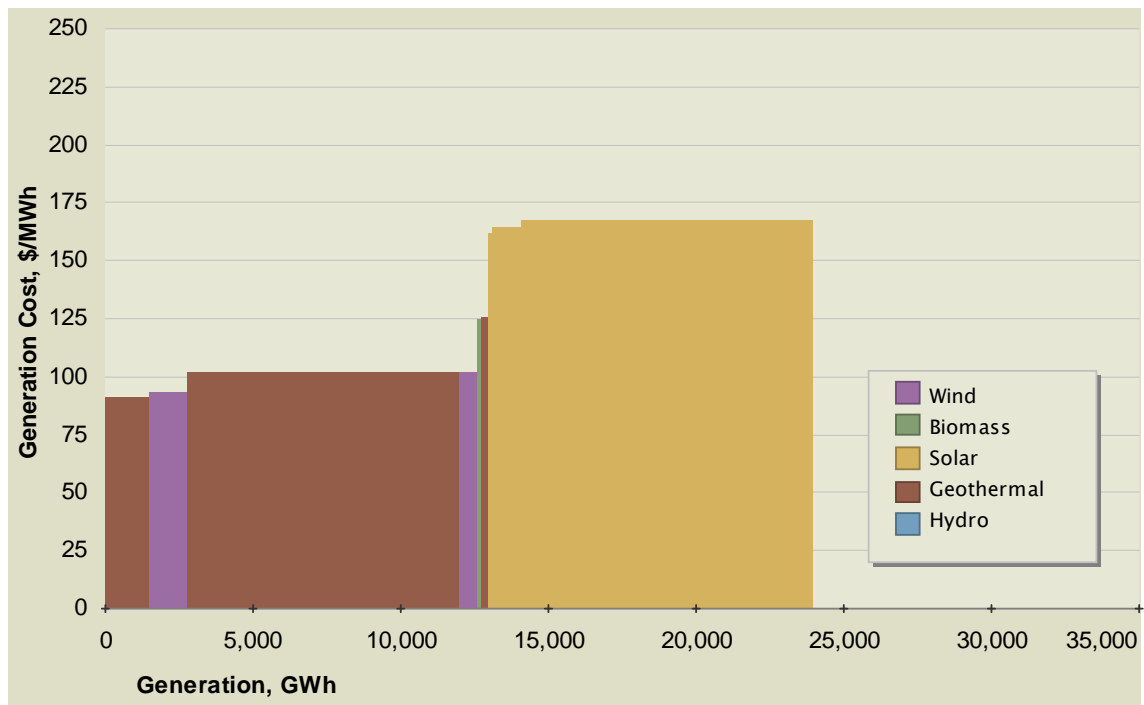


Figure A-24. CA_SO QRA Supply Curve.

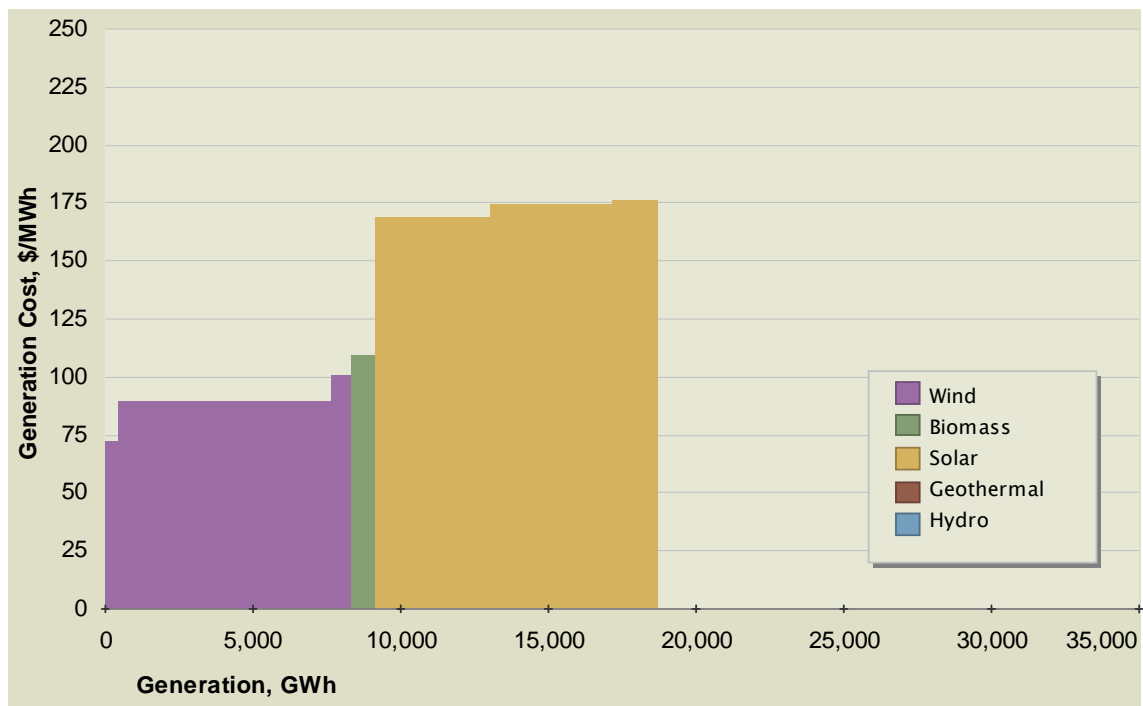


Figure A-25. CA_WE QRA Supply Curve.

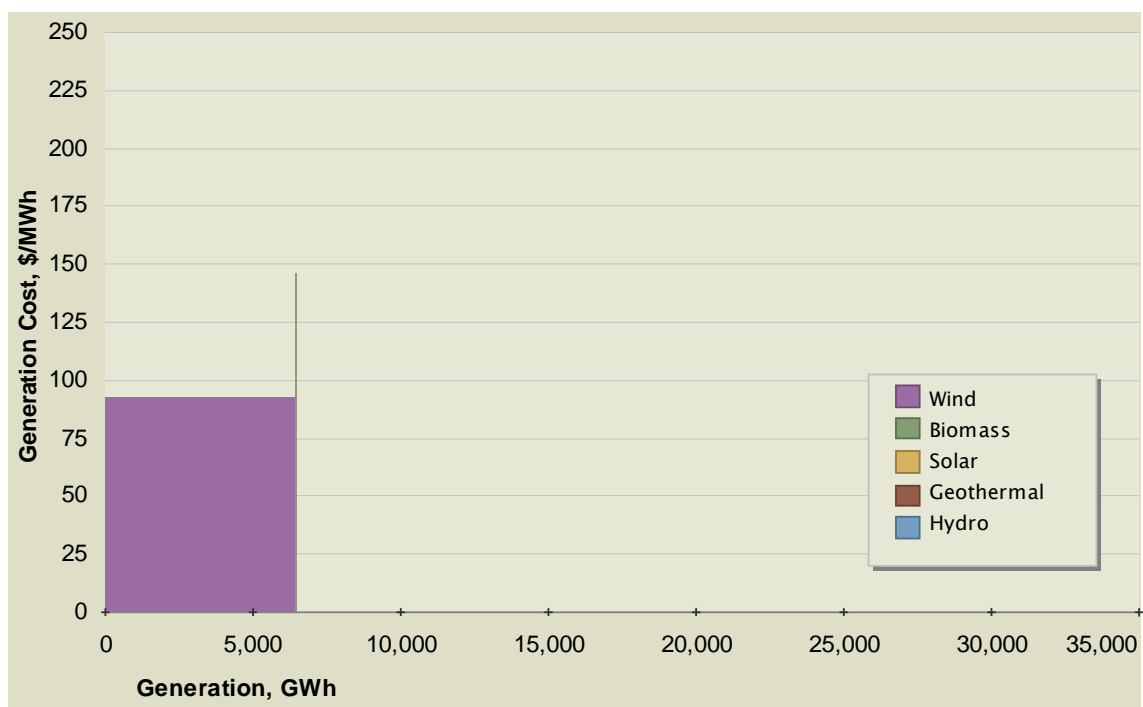


Figure A-26. CO_EA QRA Supply Curve.

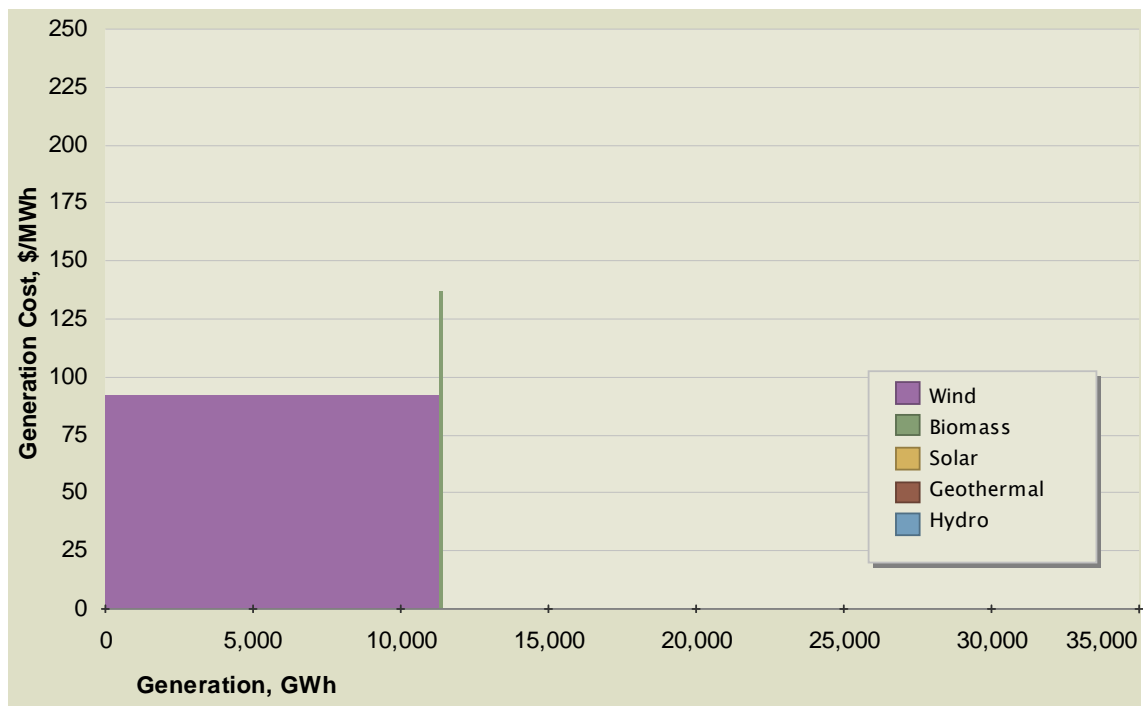


Figure A-27. CO_NE QRA Supply Curve.

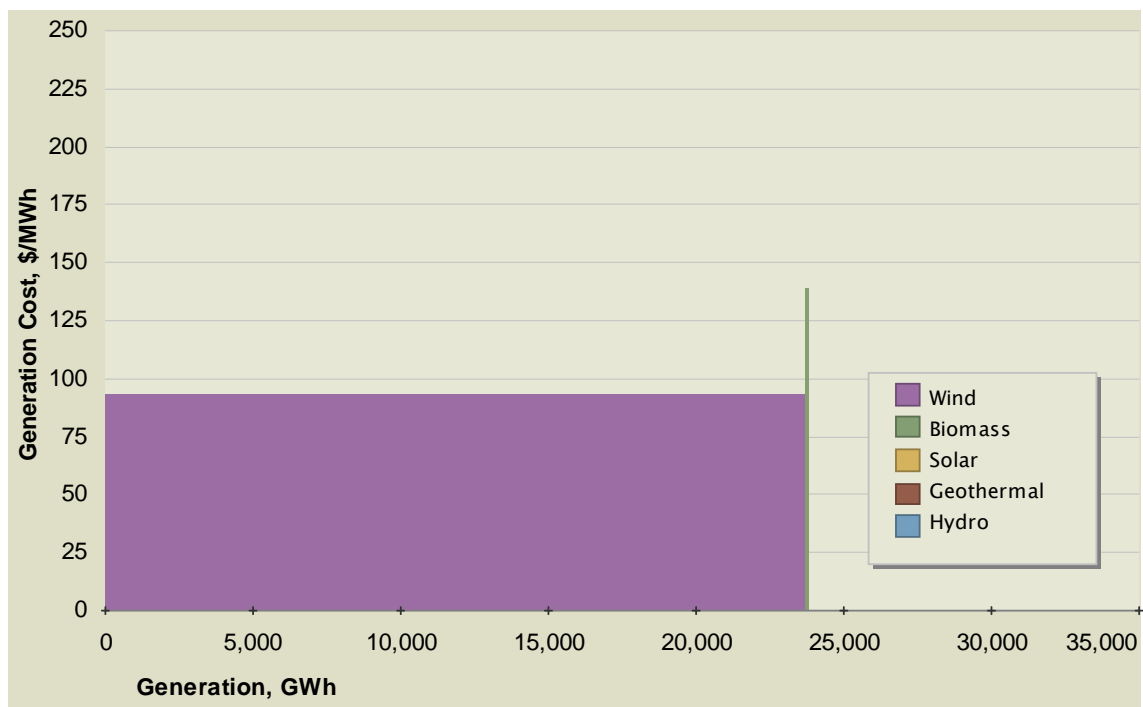


Figure A-28. CO_SE QRA Supply Curve.

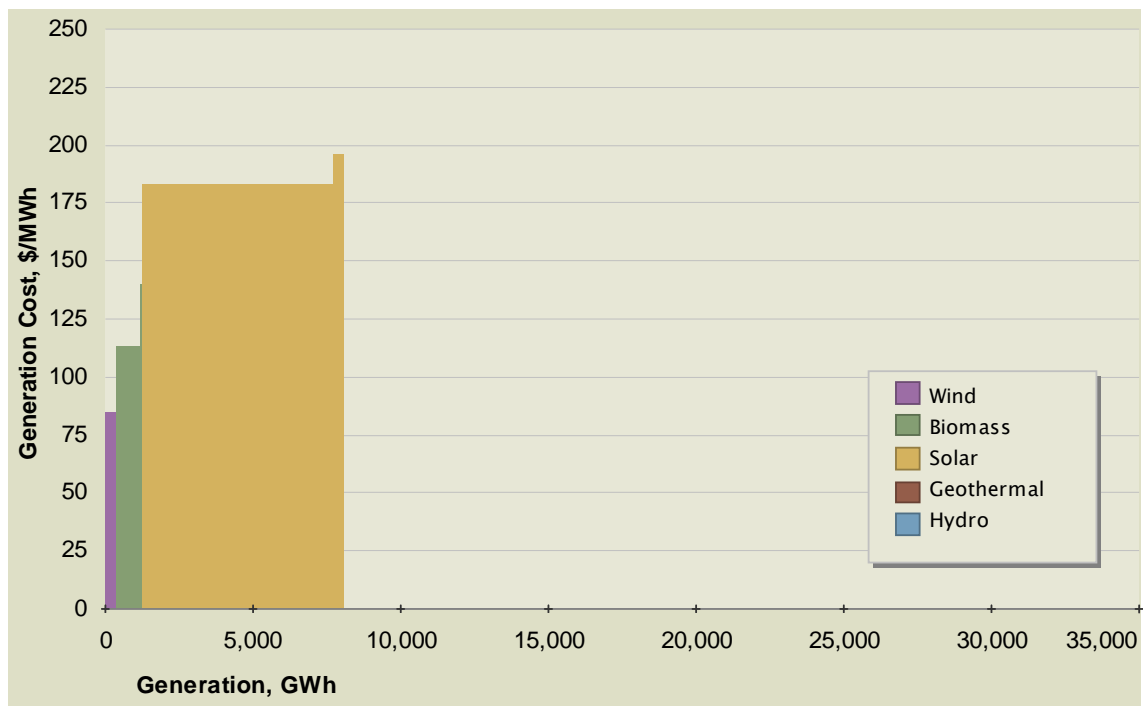


Figure A-29. CO_SO QRA Supply Curve.

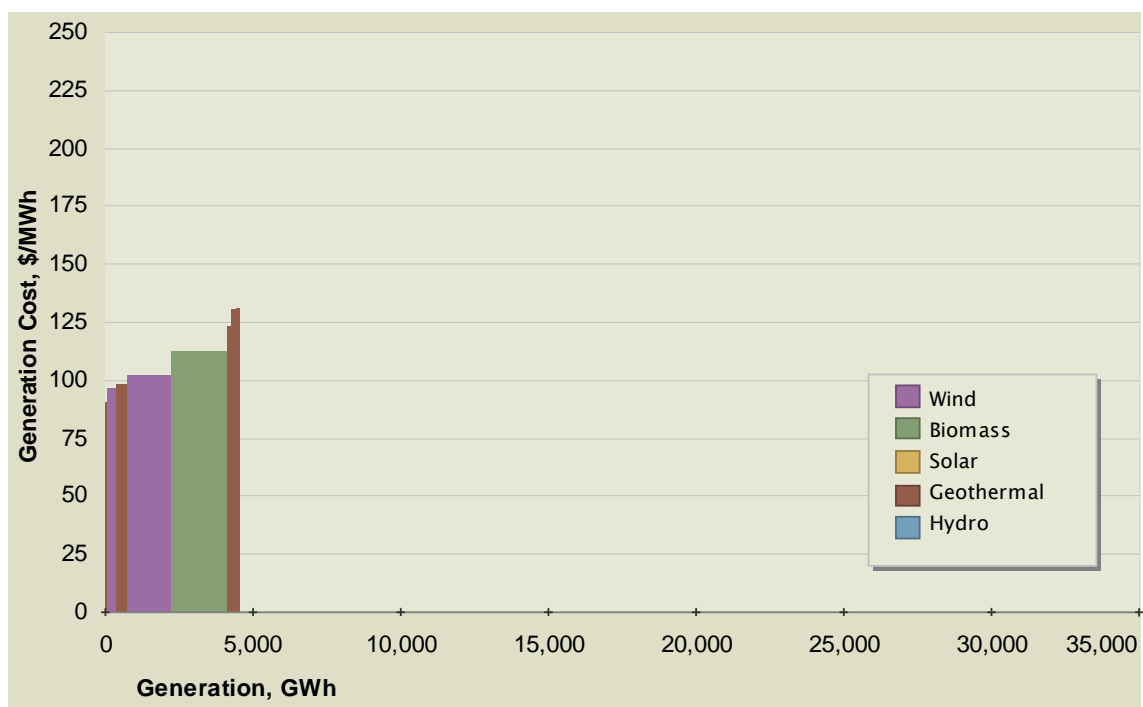


Figure A-30. ID_EA QRA Supply Curve.

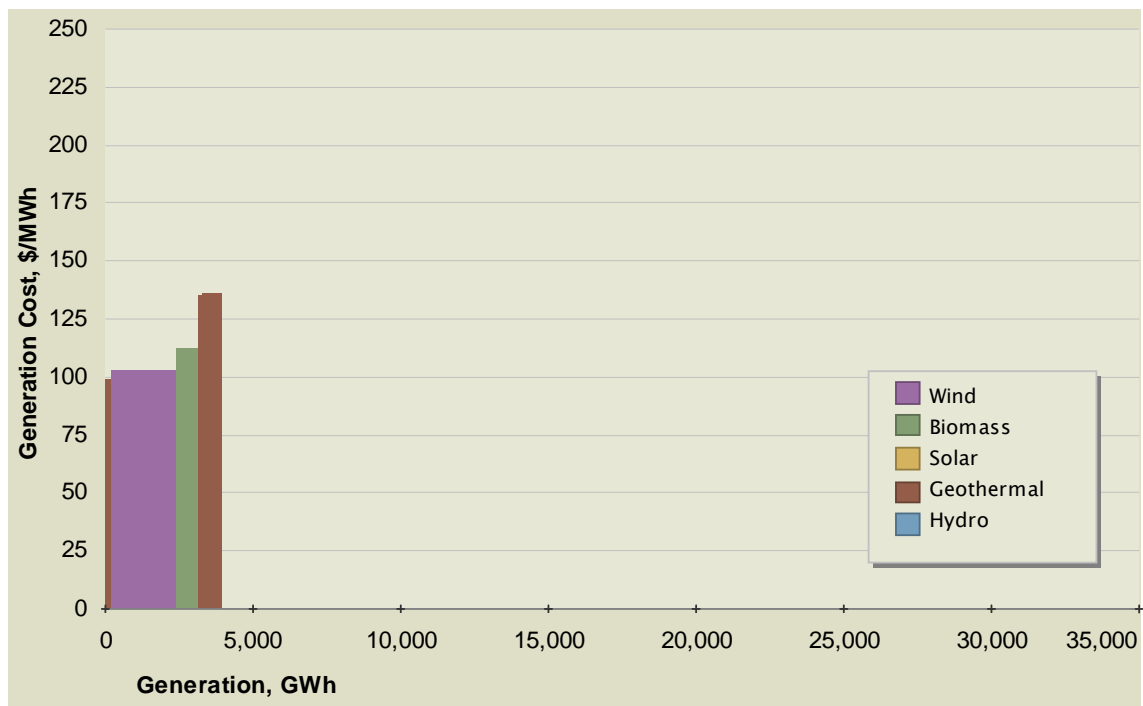


Figure A-31. ID_SW QRA Supply Curve.

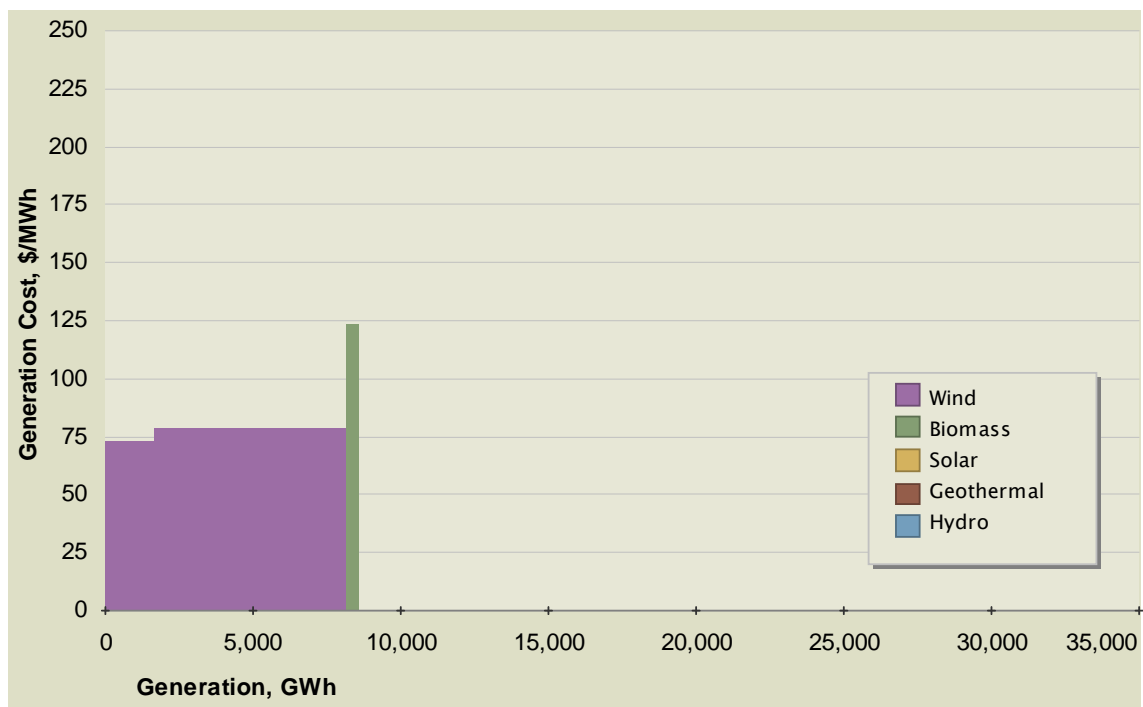


Figure A-32. MT_CT QRA Supply Curve.

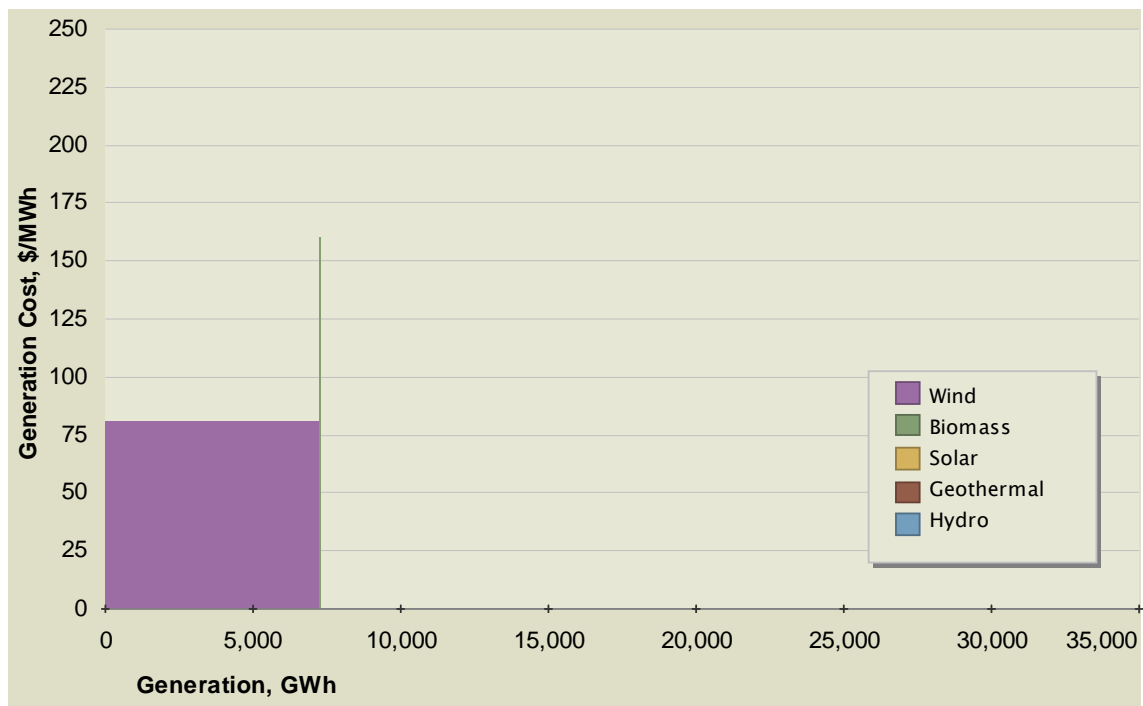


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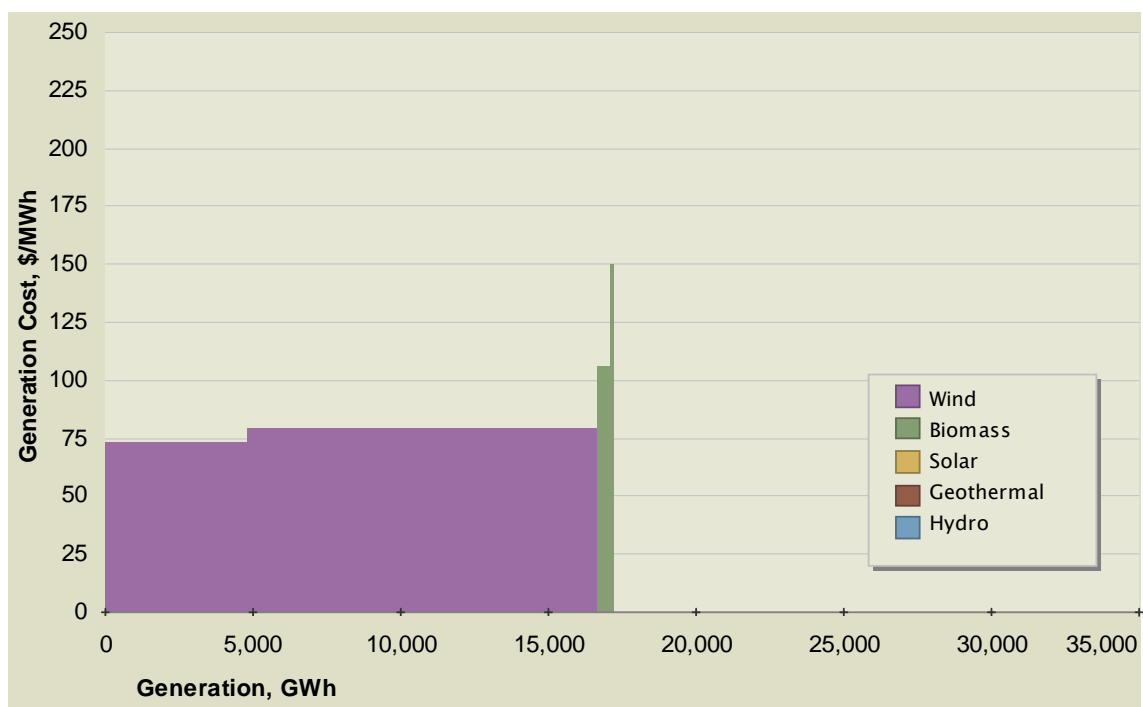


Figure A-34. MT_NW QRA Supply Curve.

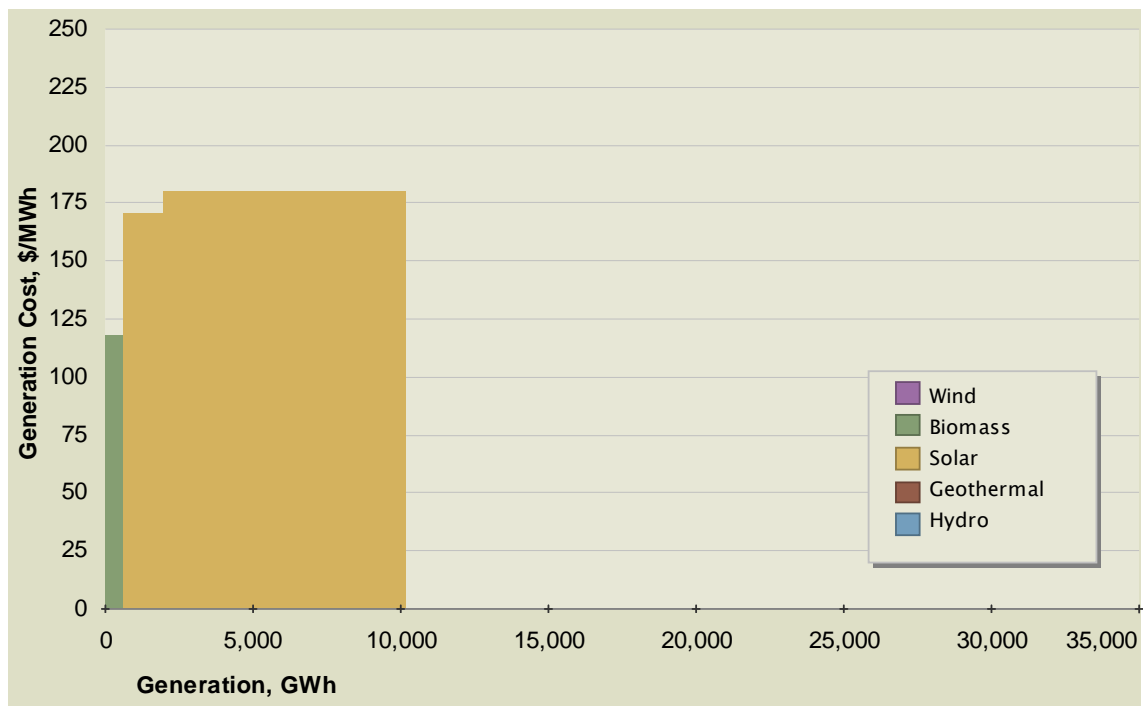


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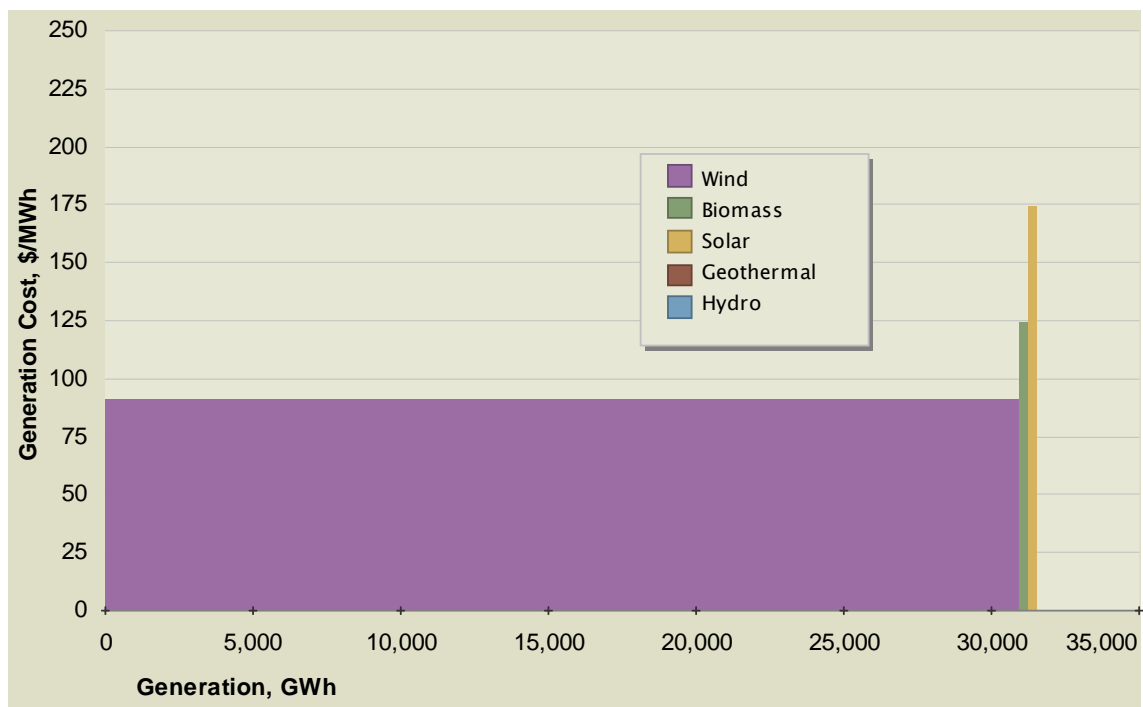


Figure A-36. NM_EA QRA Supply Curve.

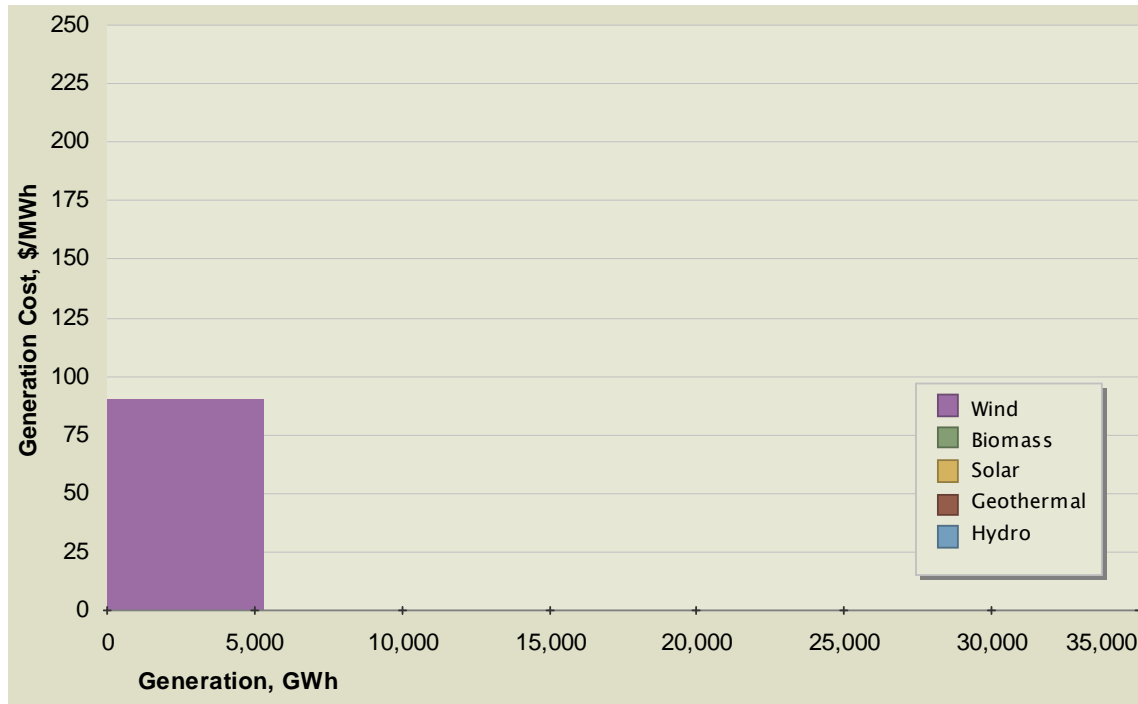


Figure A-37. NM_SE QRA Supply Curve.

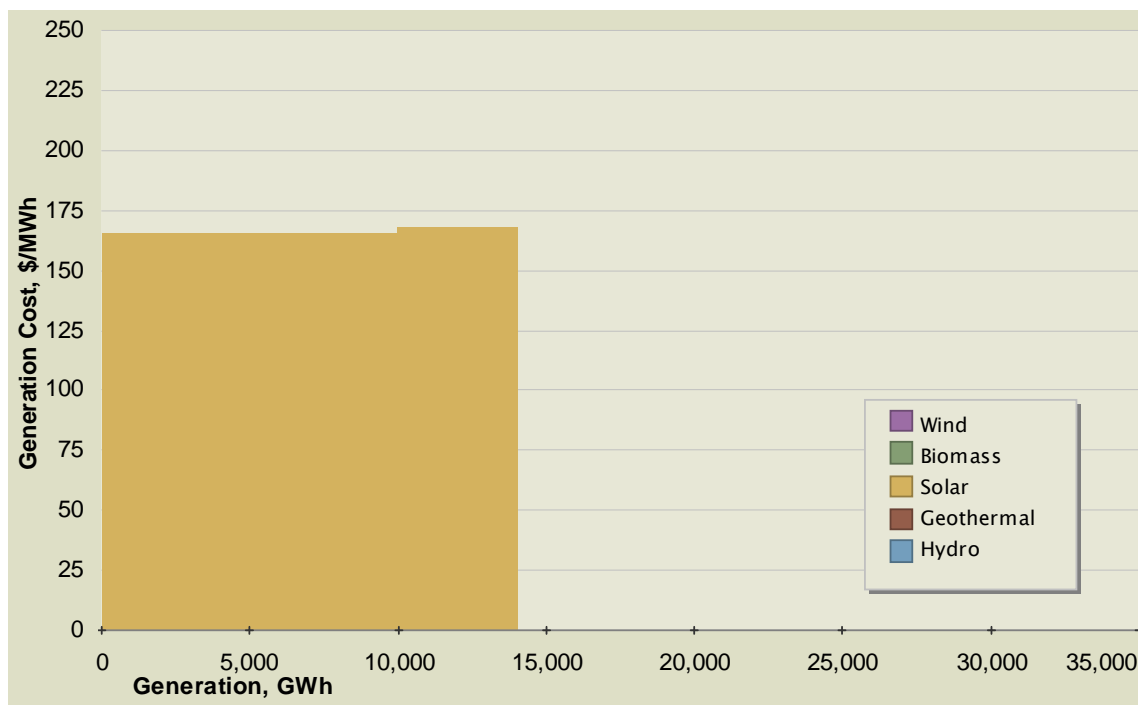


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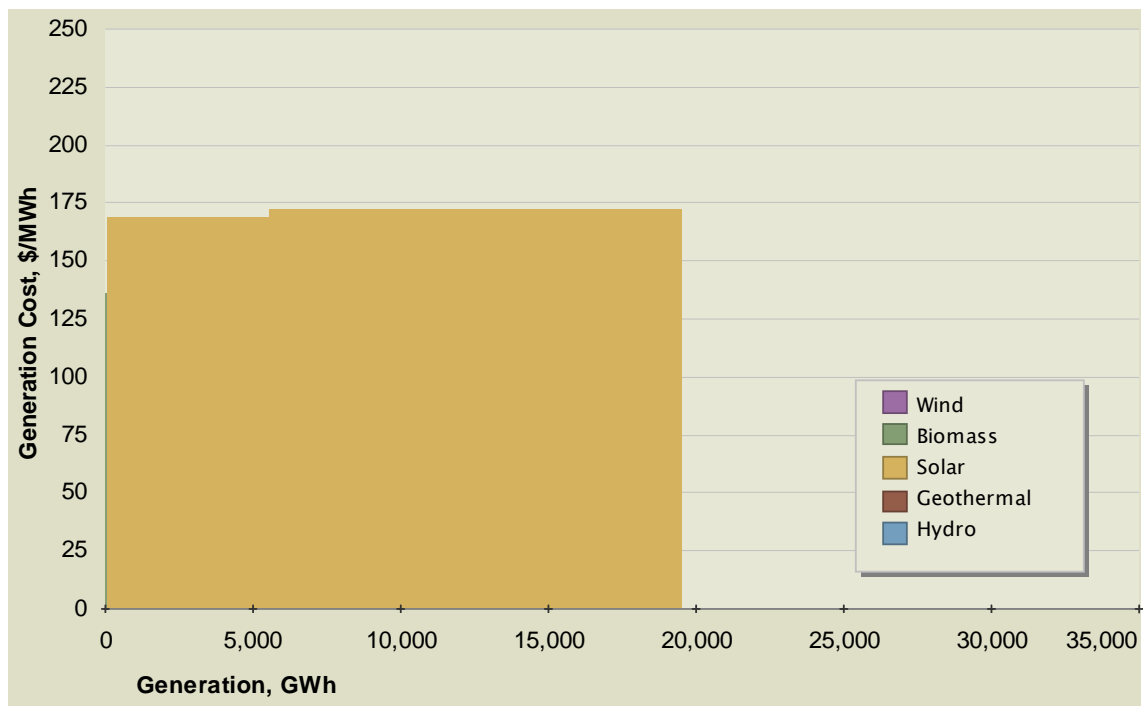


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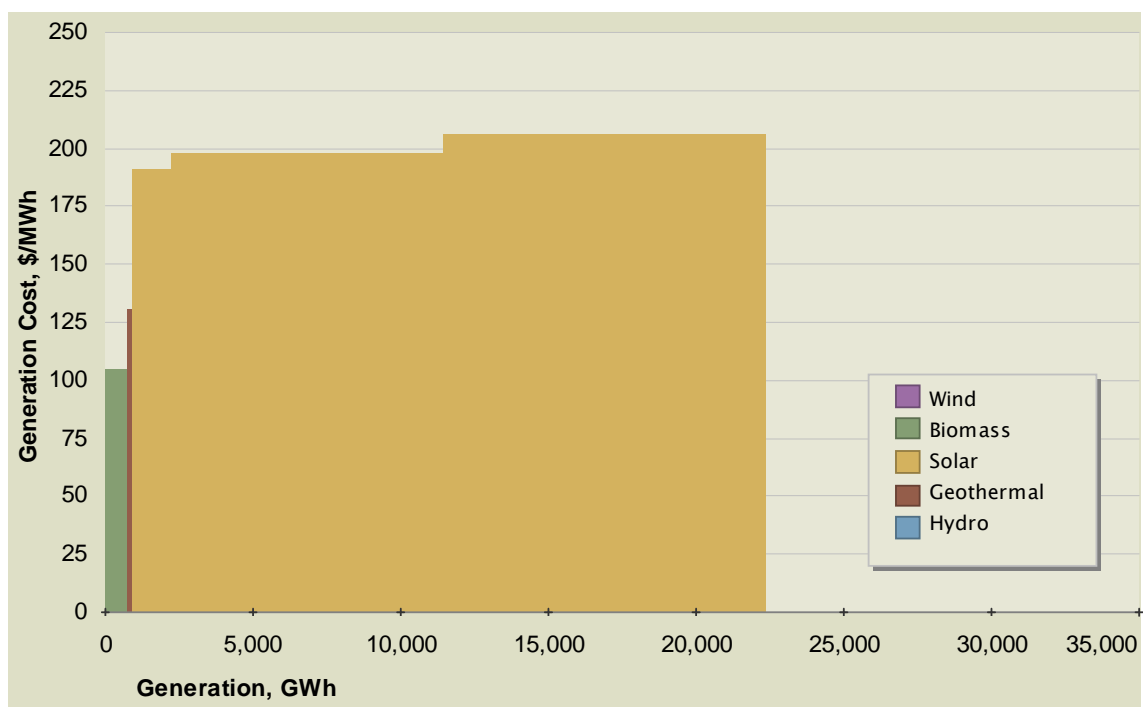


Figure A-40. NV_EA QRA Supply Curve.

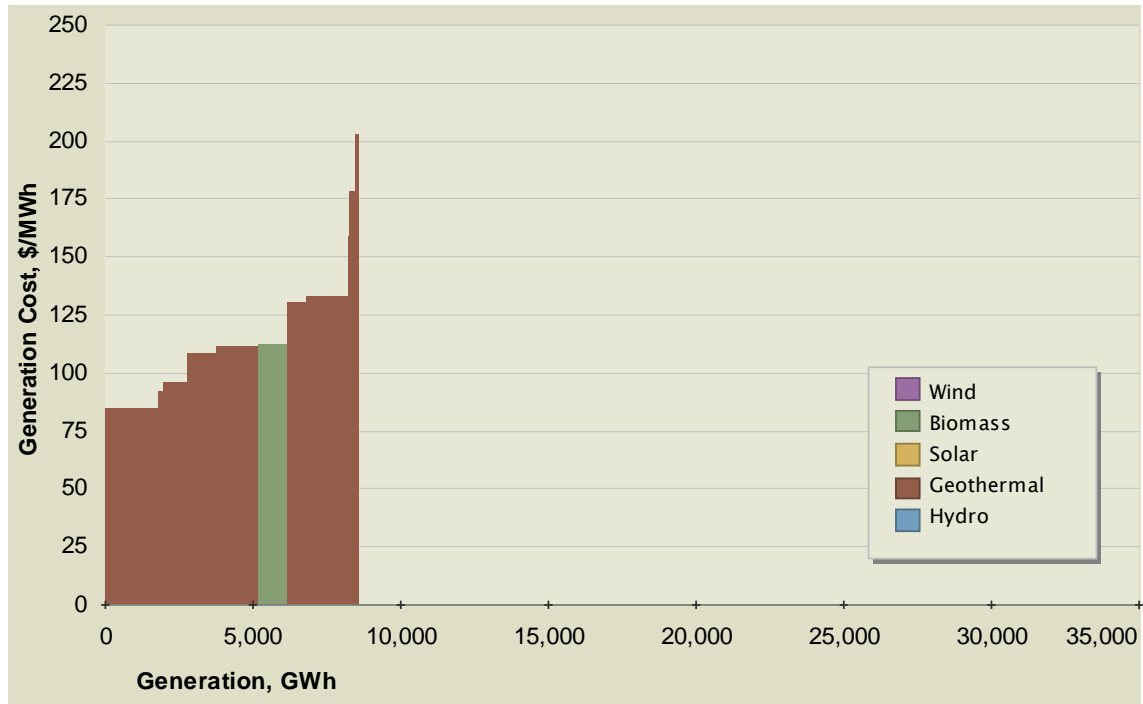


Figure A-41. NV_NO QRA Supply Curve.

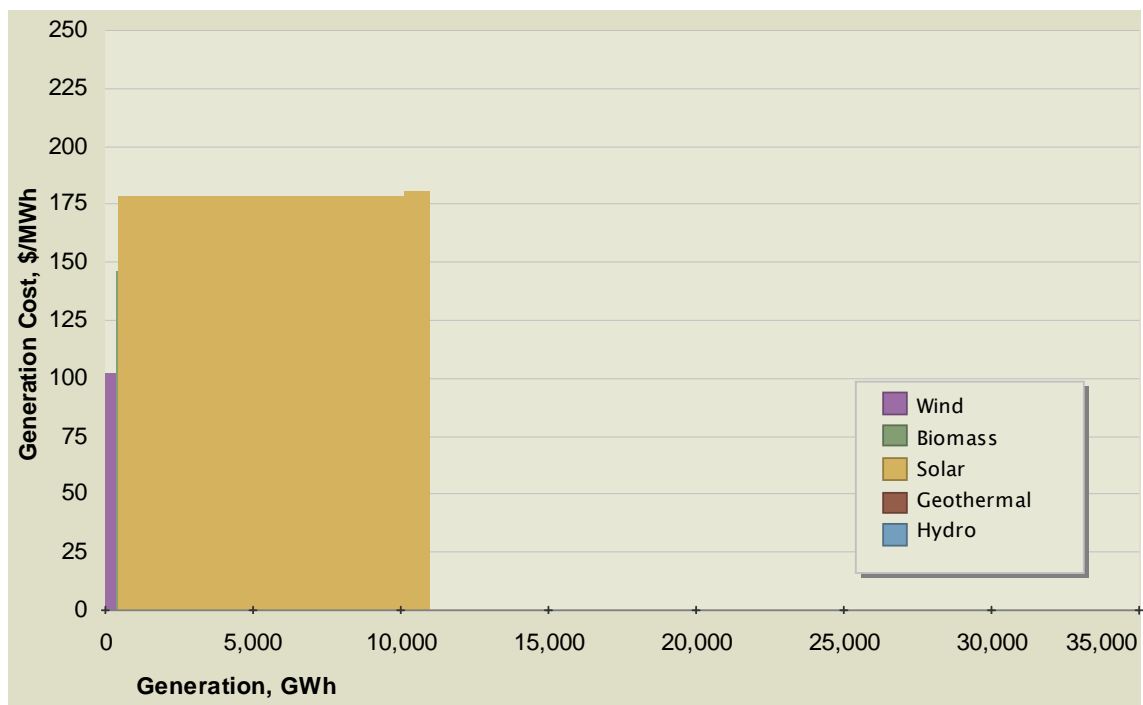


Figure A-42. NV_SW QRA Supply Curve.

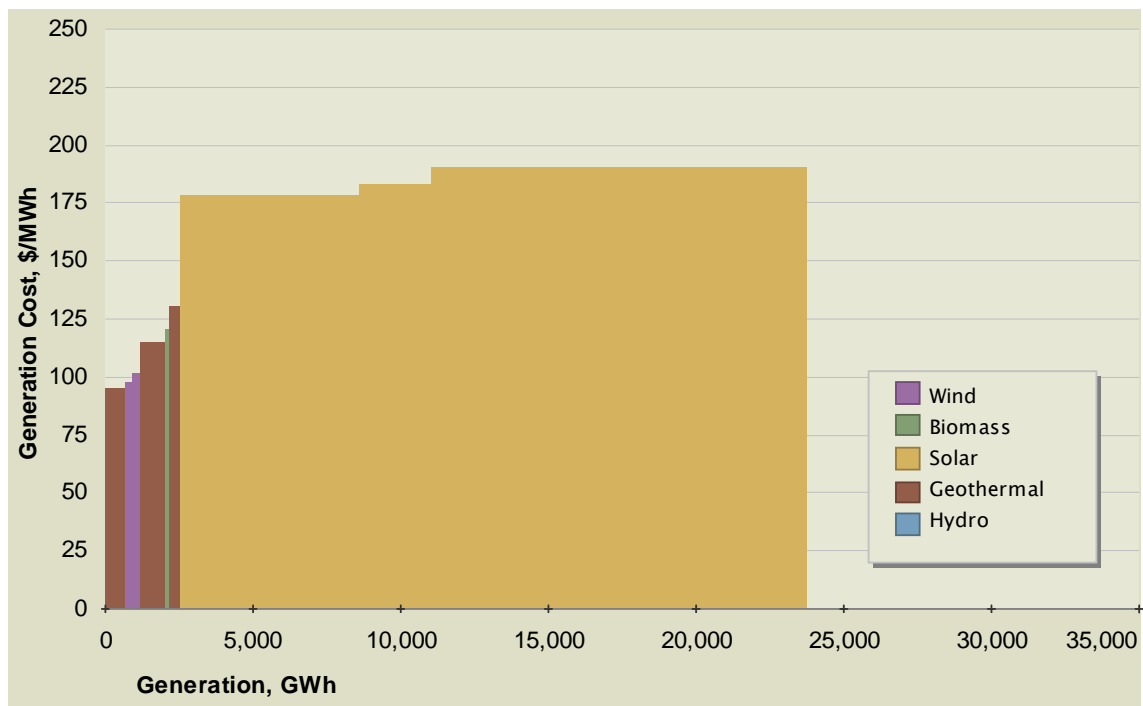


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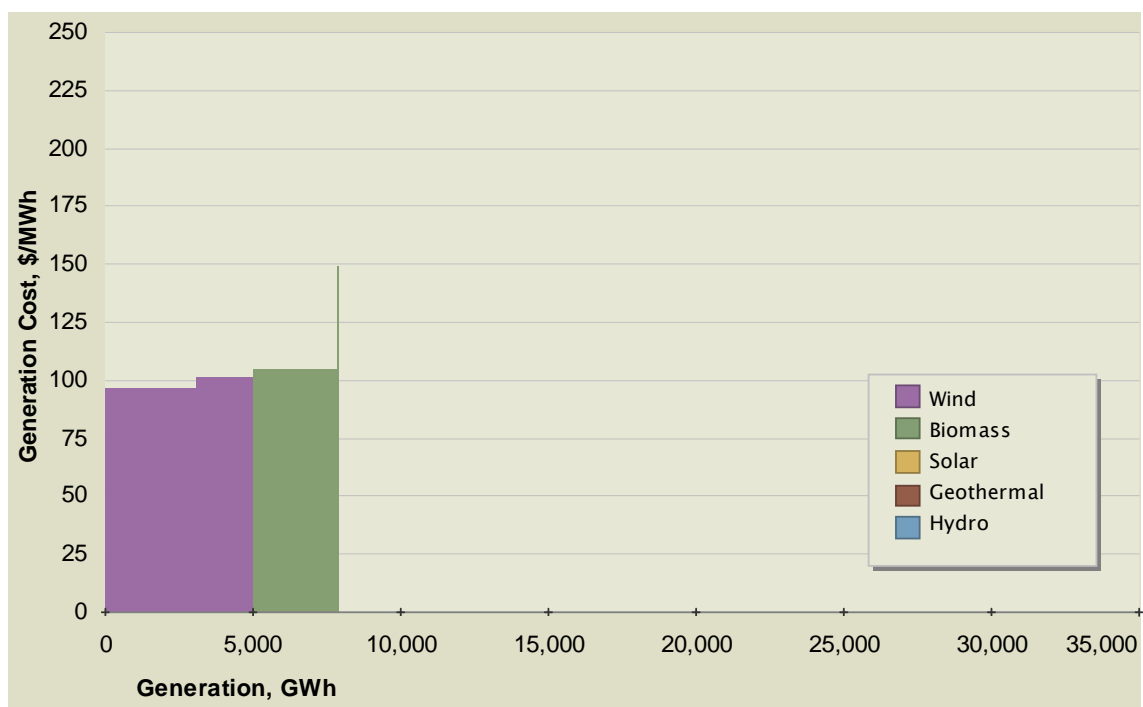


Figure A-44. OR_NE QRA Supply Curve.

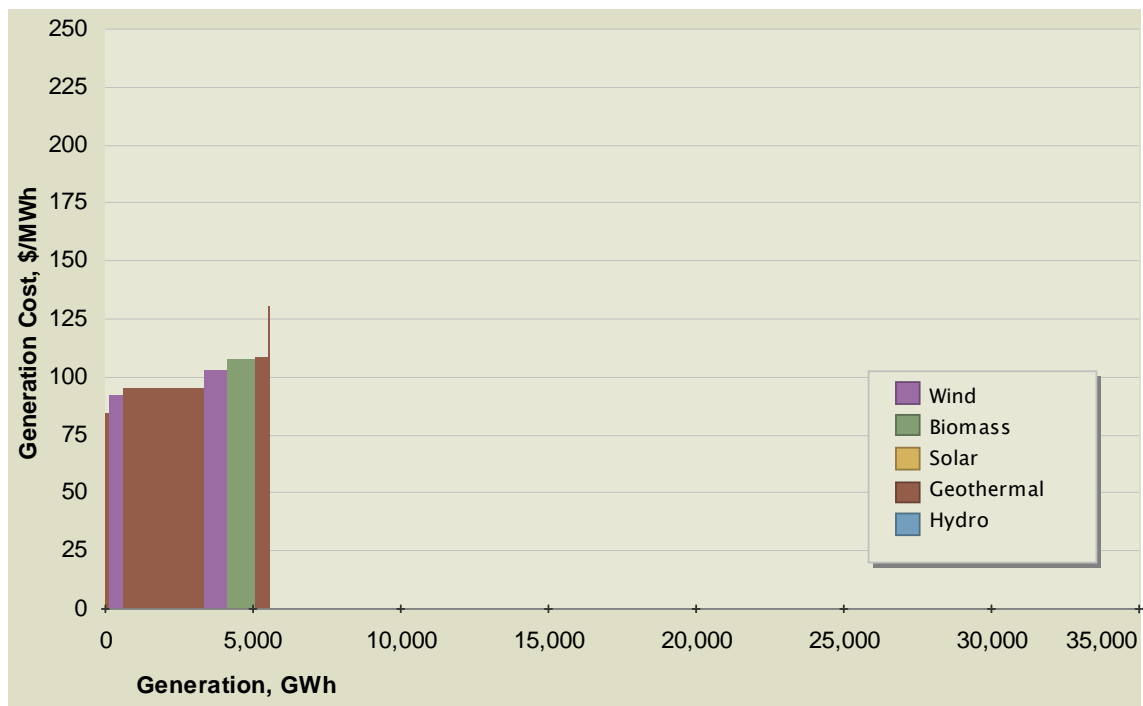


Figure A-45. OR_SO QRA Supply Curve.

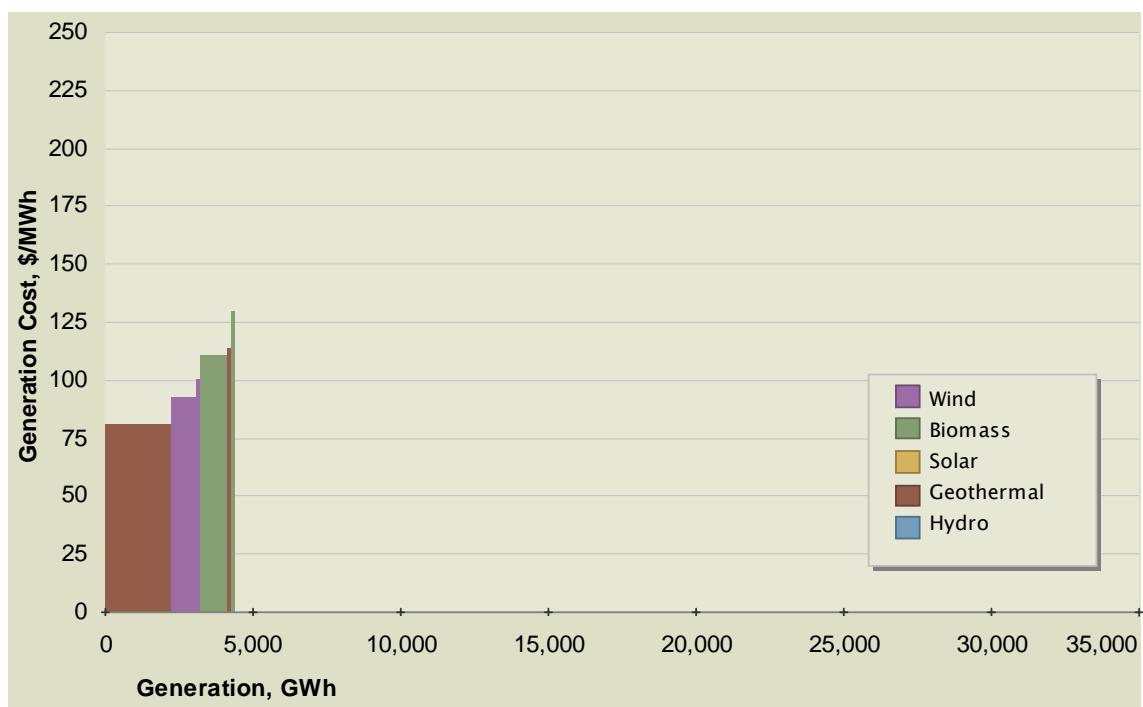


Figure A-46. OR_WE QRA Supply Curve.

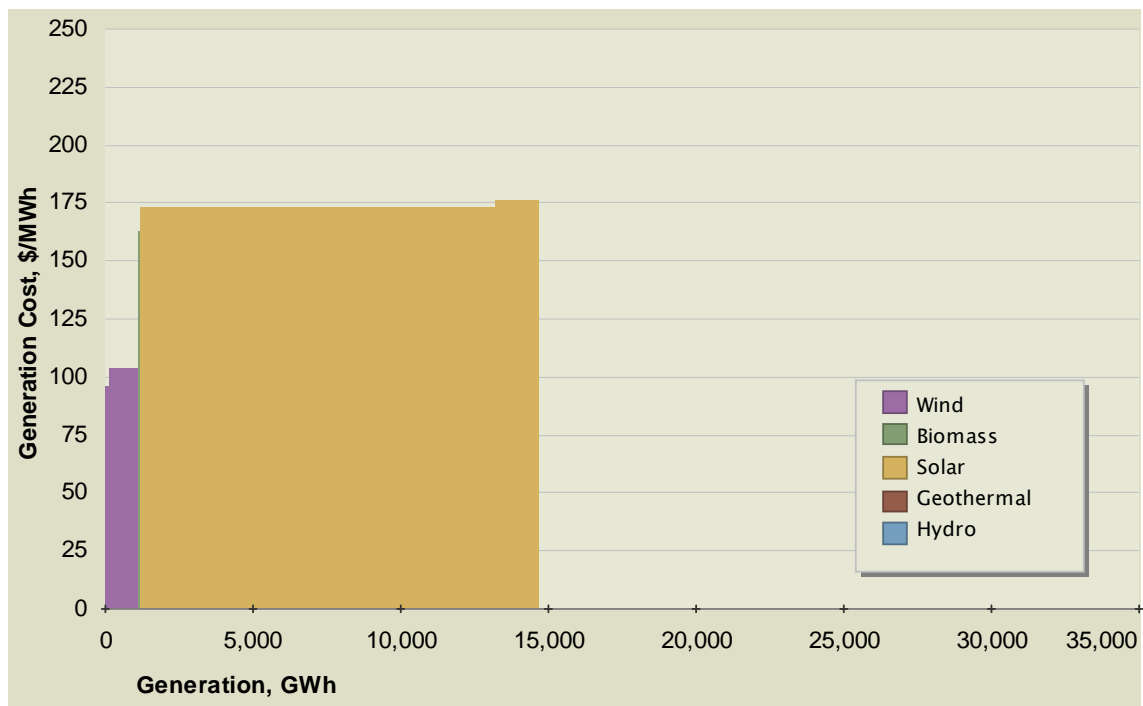


Figure A-47. TX QRA Supply Curve.

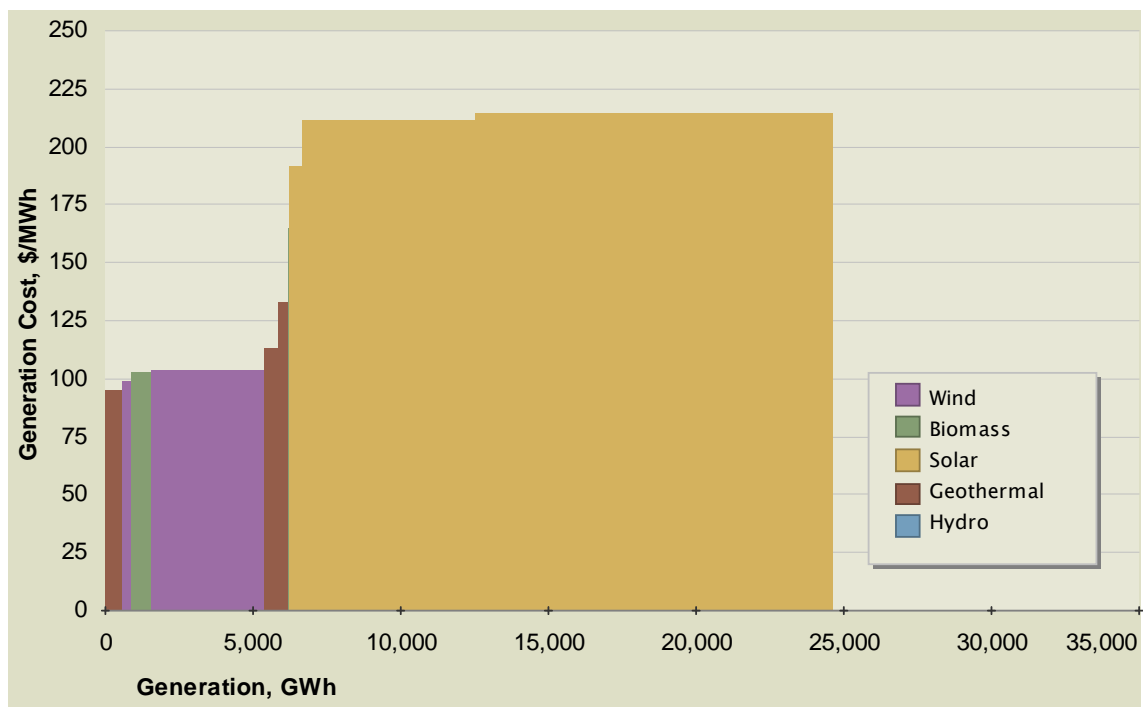


Figure A-48. UT_WE QRA Supply Curve.

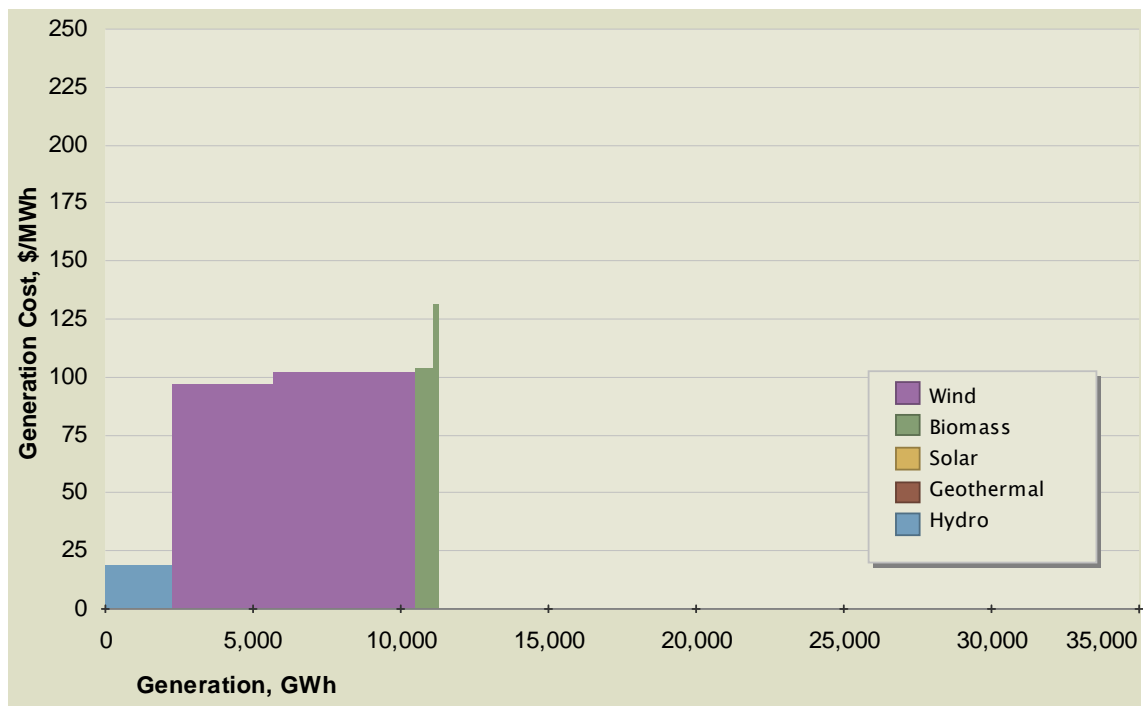


Figure A-49. WA_SO QRA Supply Curve.

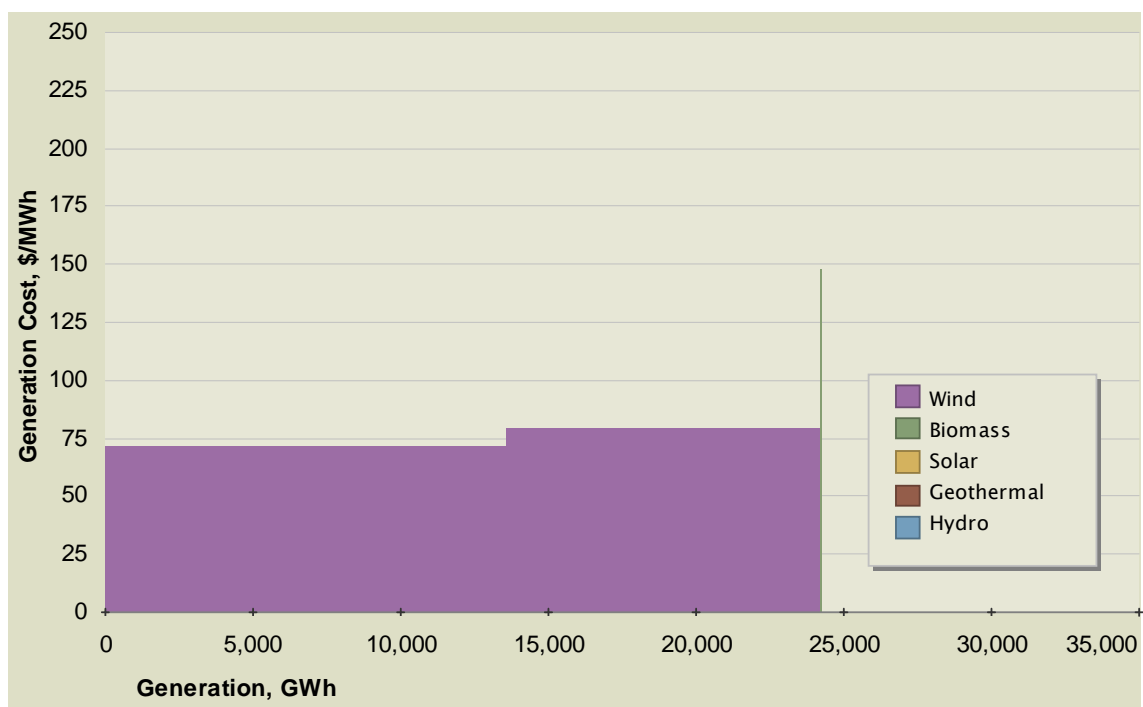


Figure A-50. WY_EA QRA Supply Curve.

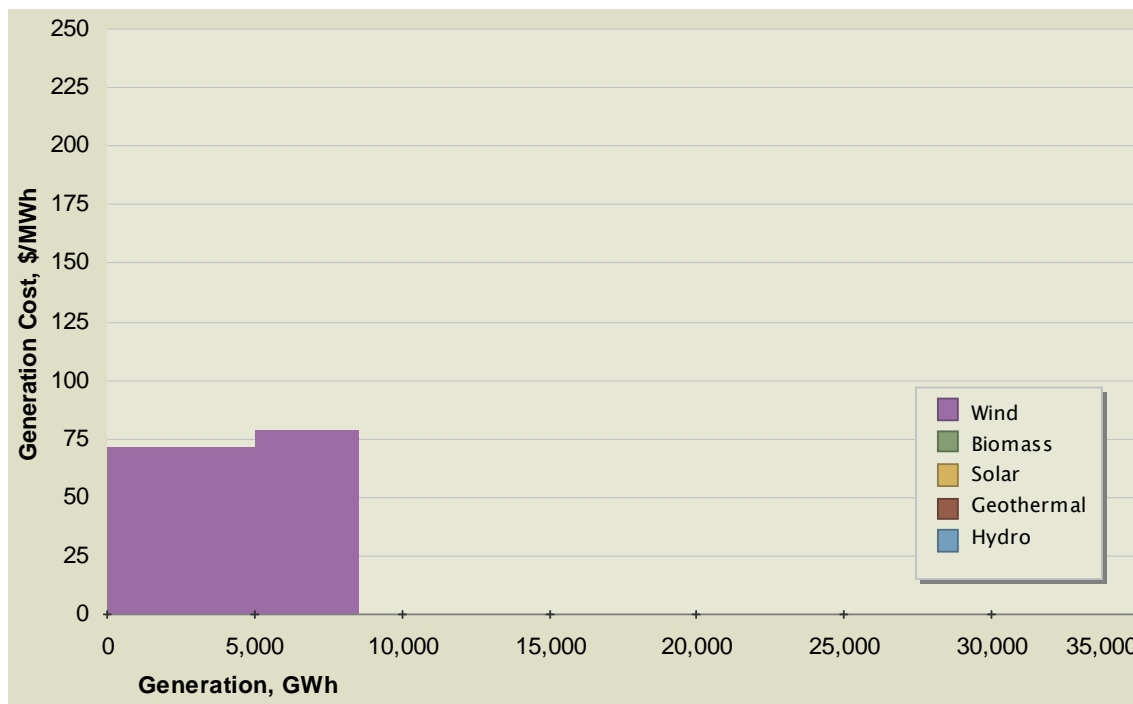


Figure A-51. WY_EC QRA Supply Curve.

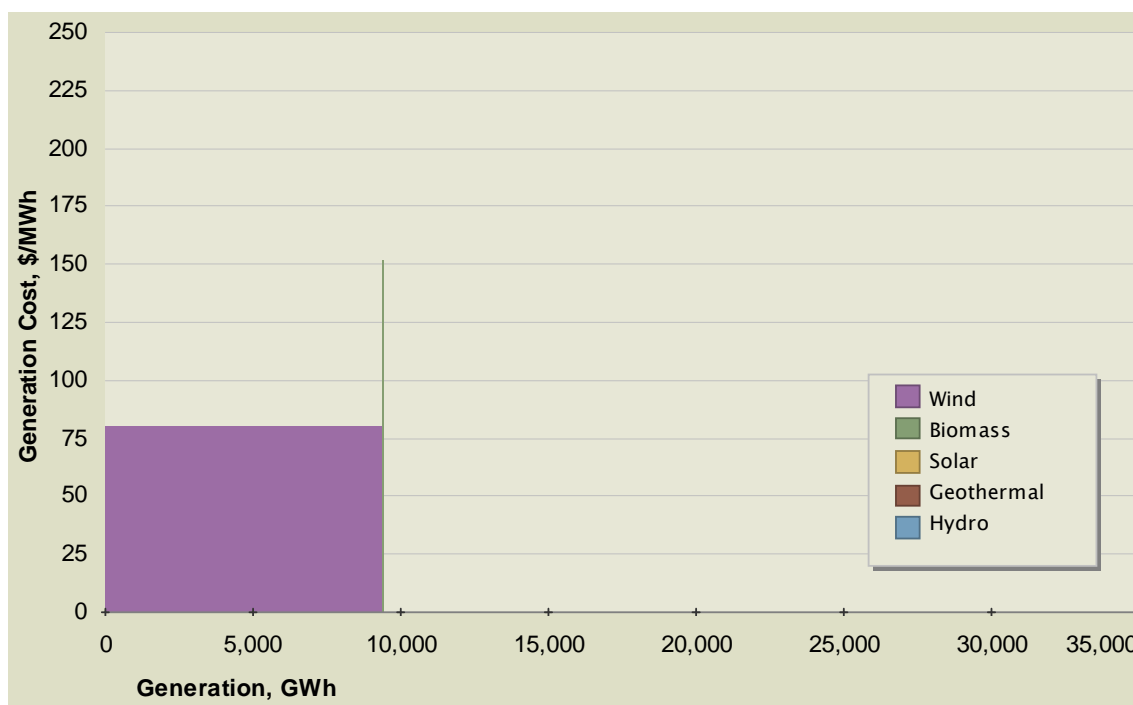


Figure A-52. WY_NO QRA Supply Curve.

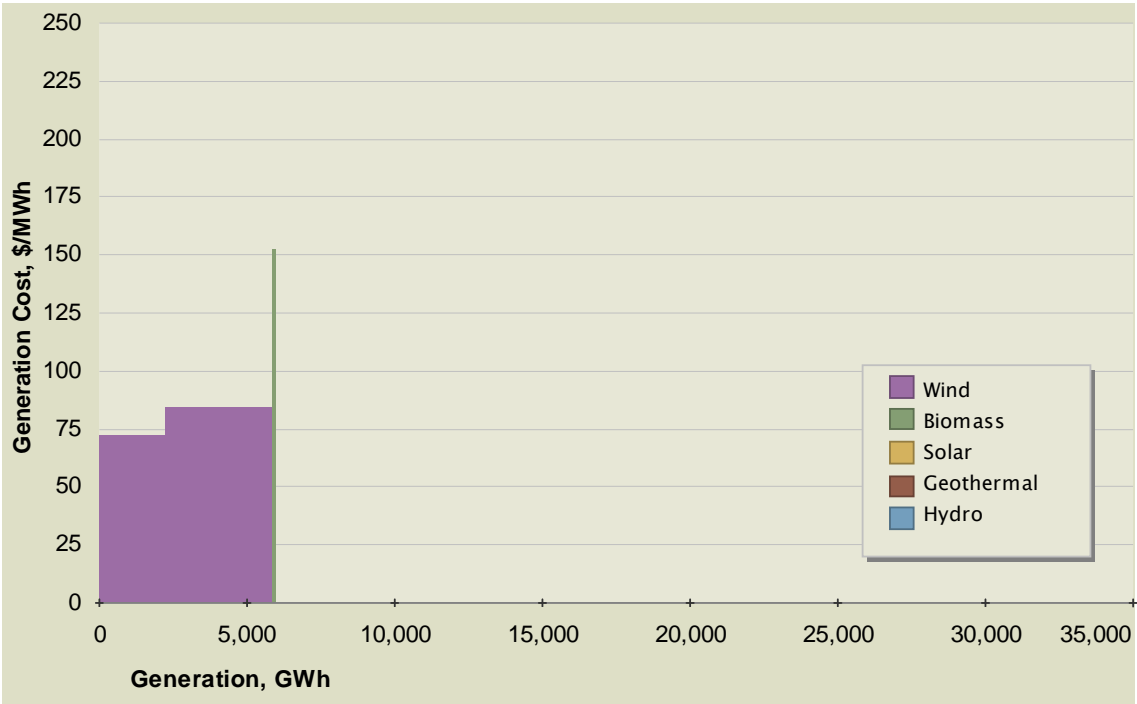


Figure A-53. WY_SO QRA Supply Curve.