

NPO Overview



– NOTICE –

UxC, LLC (“UxC”) shall have title to, ownership of, and all proprietary rights in this Report. Under United States federal copyright law (17 USC 101 et seq.) it is illegal to reproduce this Report by any means without written permission from UxC.

The information contained in this Report is obtained from sources that UxC believes to be reliable. UxC makes no warranty or representation, express or implied, with respect to the accuracy, completeness or usefulness of the information contained in this Report and UxC, to the maximum extent permitted by law, assumes no liability for the use or effects of any of the information or data contained in this Report.

It is UxC’s strict policy not to endorse, promote, or recommend any particular securities, currencies, or other financial products or instruments. Nothing contained in this Report is intended to constitute investment, legal, tax, accounting or other professional advice and the reader should not rely on the information provided in this Report for making financial decisions.

The Ux U₃O₈ Price[®] and other Ux Price indicators are developed by UxC, LLC (UxC) and are proprietary and exclusive intellectual property of UxC. These price indicators are provided to UxC’s customers through the Ux Weekly[®] publication and are made available on UxC’s public website solely at UxC’s discretion. They may not be reproduced or otherwise used without UxC’s express permission.

UxC[®], Ux Weekly[®], Ux U₃O₈ Price[®], Ux[®], U-PRICE[®], and SWU-PRICE[®] are trademarks of UxC, LLC.

Table of Contents

Introduction & Overview	5
1 – Global Nuclear Power Status	6
Nuclear Power Since Fukushima	6
UxC Nuclear Power Regions	7
Country Selections and Classifications	8
Current Status of Global Nuclear Power	9
Changes from Previous Reports	10
Overview Data on Operating and Shutdown Nuclear Power Plants	11
Regional Distribution of Operating Reactors	11
Operating Reactors by Startup Year	12
Statistics on Operating Reactor Technologies	13
Regional Distribution of Shutdown Reactors	14
Statistics on Shutdown Reactor Technologies	15
2 – Regional & Country Summaries: North America	16
North America Overall Reactor Data	16
Existing Nuclear Power Countries	16
Canada	17
United States	21
Mexico	26
3 – Regional & Country Summaries: Western Europe	28
Western Europe Overall Reactor Data	28
Existing Nuclear Power Countries	28
France	29
United Kingdom	32
Germany	35
Sweden	37
Finland	39
Spain	40
Switzerland	42
Belgium	44
Netherlands	46
4 – Regional & Country Summaries: Eastern Europe	47
Eastern Europe Overall Reactor Data	47
Existing Nuclear Power Countries	47
Russia	48
Ukraine	51
Czech Republic	53
Slovakia	56
Hungary	58
Bulgaria	60
Romania	62
Slovenia	64
Armenia	66
Potential New Nuclear Power Countries	68
Belarus	68
Poland	70
5 – Regional & Country Summaries: Asia & Oceania	72
Asia & Oceania Overall Reactor Data	72
Existing Nuclear Power Countries	72
Japan	73
South Korea	77
China	80
Taiwan	84
India	87
Pakistan	90

Potential New Nuclear Power Countries	92
Bangladesh	92
Vietnam	95
Indonesia.....	96
Malaysia	97
Thailand	98
Singapore.....	100
Kazakhstan	101
Uzbekistan	102
Philippines.....	103
Australia	104
6 – Regional & Country Summaries: Africa & Middle East	105
Africa & Middle East Overall Reactor Data.....	105
Existing Nuclear Power Countries.....	105
South Africa.....	106
Iran.....	107
Potential New Nuclear Power Countries	108
Kenya.....	109
Ghana	110
Nigeria.....	111
Algeria.....	111
Egypt.....	112
Jordan	113
Turkey	114
United Arab Emirates	116
Saudi Arabia.....	117
7 – Regional & Country Summaries: South America	119
South America Overall Reactor Data	119
Existing Nuclear Power Countries.....	119
Brazil	119
Argentina.....	121
Appendix A – Operating Reactors in 2019	123
Appendix B – Shutdown Reactors	133

List of Figures

Figure 1. Map of NPO Countries by Region.....	7
Figure 2. Map of NPO Countries by Ranking.....	8
Figure 3. Percentage of Operating Units by Region.....	11
Figure 4. Percentage of Operating Nuclear Capacity by Region.....	12
Figure 5. Operating Reactors by Startup Year.....	12
Figure 6. Percentages of Different Operating Reactor Types.....	13
Figure 7. Percentage of Shutdown Units by Region.....	14
Figure 8. Percentage of Shutdown Nuclear Capacity by Region.....	14
Figure 9. Percentages of Shutdown Reactor Types.....	15

List of Tables

Table 1. List of NPO Countries by Region.....	7
Table 2. List of NPO Countries by Ranking.....	8
Table 3. Global Nuclear Power Data in Early 2019.....	9
Table 4. World Nuclear Power Status by Region in Early 2019.....	9
Table 5. World Nuclear Power Status, 2011 vs. 2019.....	10
Table 6. World Nuclear Power Status, 2018 vs. 2019.....	10
Table 7. Regional Breakdown for Operating Reactors.....	11
Table 8. Operating Reactor Types.....	13
Table 9. Regional Breakdown for Shutdown Reactors.....	14
Table 10. Shutdown Reactor Types.....	15
Table 11. North America Nuclear Power Data.....	16
Table 12. Canada Nuclear & Electric Power Data.....	17
Table 13. United States Nuclear & Electric Power Data.....	21
Table 14. Mexico Nuclear & Electric Power Data.....	26
Table 15. Western Europe Nuclear Power Data.....	28
Table 16. France Nuclear & Electric Power Data.....	29
Table 17. United Kingdom Nuclear & Electric Power Data.....	32
Table 18. Germany Nuclear & Electric Power Data.....	35
Table 19. Sweden Nuclear & Electric Power Data.....	37
Table 20. Finland Nuclear & Electric Power Data.....	39
Table 21. Spain Nuclear & Electric Power Data.....	40
Table 22. Switzerland Nuclear & Electric Power Data.....	42
Table 23. Belgium Nuclear & Electric Power Data.....	44
Table 24. Netherlands Nuclear & Electric Power Data.....	46
Table 25. Eastern Europe Nuclear Power Data.....	47
Table 26. Russia Nuclear & Electric Power Data.....	48
Table 27. Ukraine Nuclear & Electric Power Data.....	51
Table 28. Czech Republic Nuclear & Electric Power Data.....	53
Table 29. Slovakia Nuclear & Electric Power Data.....	56
Table 30. Hungary Nuclear & Electric Power Data.....	58
Table 31. Bulgaria Nuclear & Electric Power Data.....	60
Table 32. Romania Nuclear & Electric Power Data.....	62
Table 33. Slovenia Nuclear & Electric Power Data.....	64
Table 34. Armenia Nuclear & Electric Power Data.....	66
Table 35. Probabilities for New Nuclear Countries in Eastern Europe.....	68
Table 36. Belarus Nuclear & Electric Power Data.....	68
Table 37. Poland Nuclear & Electric Power Data.....	70
Table 38. Asia & Oceania Nuclear Power Data.....	72
Table 39. Japan Nuclear & Electric Power Data.....	73

Table 40. South Korea Nuclear & Electric Power Data.....	77
Table 41. China Nuclear & Electric Power Data	80
Table 42. Taiwan Nuclear & Electric Power Data	84
Table 43. India Nuclear & Electric Power Data.....	87
Table 44. Pakistan Nuclear & Electric Power Data.....	90
Table 45. Probabilities for New Nuclear Countries in Asia & Oceania.....	92
Table 46. Bangladesh Nuclear & Electric Power Data.....	92
Table 47. Vietnam Nuclear & Electric Power Data	95
Table 48. Indonesia Nuclear & Electric Power Data	96
Table 49. Malaysia Nuclear & Electric Power Data	97
Table 50. Thailand Nuclear & Electric Power Data.....	98
Table 51. Singapore Nuclear & Electric Power Data	100
Table 52. Kazakhstan Nuclear & Electric Power Data	101
Table 53. Uzbekistan Nuclear & Electric Power Data.....	102
Table 54. Philippines Nuclear & Electric Power Data	103
Table 55. Australia Nuclear & Electric Power Data.....	104
Table 56. Africa & Middle East Nuclear Power Data	105
Table 57. South Africa Nuclear & Electric Power Data	106
Table 58. Iran Nuclear & Electric Power Data	107
Table 59. Probabilities for New Nuclear Countries in Africa & Mideast	108
Table 60. Kenya Nuclear & Electric Power Data	109
Table 61. Ghana Nuclear & Electric Power Data.....	110
Table 62. Nigeria Nuclear & Electric Power Data	111
Table 63. Algeria Nuclear & Electric Power Data	111
Table 64. Egypt Nuclear & Electric Power Data	112
Table 65. Jordan Nuclear & Electric Power Data.....	113
Table 66. Turkey Nuclear & Electric Power Data.....	114
Table 67. UAE Nuclear & Electric Power Data	116
Table 68. Saudi Arabia Nuclear & Electric Power Data	117
Table 69. South America Nuclear Power Data	119
Table 70. Brazil Nuclear & Electric Power Data.....	119
Table 71. Argentina Nuclear & Electric Power Data	121
Table A-1. Worldwide Reactors in Operation by Country in Early 2019	123
Table B-1. Worldwide Shutdown Reactors by Country as of Early 2019	133

Introduction & Overview

UxC, LLC (UxC) publishes this *NPO Overview* report as an annual compendium covering the status of nuclear power around the world as of the start of the current year. This *Overview* report is part of UxC's *Nuclear Power Outlook* (NPO) reporting service, which includes quarterly updates on nuclear power developments in 52 countries around the world as well as global nuclear power forecasts through 2040.

In **Chapter 1 – Global Nuclear Power Status**, we provide a brief review of the current status of world nuclear power with data on operating and shutdown reactors as of early 2019. Furthermore, a summary of the current global nuclear power status in light of the Fukushima Daiichi nuclear power accident in Japan of March 11, 2011, as well as other market challenges, is also included.

In the subsequent six chapters, we offer information on each country that either has an active nuclear power program or is considering the use of nuclear power. For each nation, we provide general energy and nuclear power data as well as an overview of the current status of nuclear power in the country. In this 2019 edition of the report, we have updated our detailed coverage for operating nuclear power countries and serious newcomers. Countries are grouped into six separate geographic regions as determined by UxC. The chapters are ordered as follows:

Chapter 2 – Regional & Country Summaries: North America

Chapter 3 – Regional & Country Summaries: Western Europe

Chapter 4 – Regional & Country Summaries: Eastern Europe

Chapter 5 – Regional & Country Summaries: Asia & Oceania

Chapter 6 – Regional & Country Summaries: Africa & Middle East

Chapter 7 – Regional & Country Summaries: South America

Additional useful data tables on operating reactors as well as shutdown units can also be found in the **Appendices** at the end of this report.

It is important to understand that this report provides an overview of the current status of nuclear power (as of early 2019) and does not endeavor to offer UxC's multi-scenario nuclear power forecasts for each country around the world. All reactor forecasting is found in the accompanying *Nuclear Power Outlook* quarterly reports, which are issued every quarter due to the rapidly changing nature of future reactor prospects around the world. On the other hand, this *NPO Overview* report is only issued once at the beginning of each year.