

# ANNEX 4 – NUCLEAR REACTORS IN THE WORLD “UNDER CONSTRUCTION”

Table 24 – Nuclear Reactors in the World “Under Construction” (as of 1 July 2021)

Country	Units	Capacity MW net	Model	Construction Start (dd/mm/yyyy)	Expected Grid Connection	Delayed
<b>ARGENTINA</b>	<b>1</b>	<b>25</b>				
Carem25		25	CAREM (PWR)	08/02/2014	2024 <sup>1</sup>	yes
<b>BANGLADESH</b>	<b>2</b>	<b>2 160</b>				
Rooppur-1		1 080	VVER-1200	30/11/2017	2023 <sup>2</sup> (commercial operation)	
Rooppur-2		1 080	VVER-1200	14/07/2018	2024 <sup>3</sup> (commercial operation)	
<b>BELARUS</b>	<b>1</b>	<b>1 109</b>				
Belarusian-2		1 109	VVER V-491	03/06/2014	2022 <sup>4</sup>	yes
<b>CHINA</b>	<b>18</b>	<b>17 062</b>				
Changjiang-3		1 000	HPR-1000 <sup>5</sup>	31/03/2021	2026 <sup>6</sup>	
Fangchenggang-3		1 000	HPR-1000	24/12/2015	2021 <sup>7</sup>	
Fangchenggang-4		1 000	HPR-1000	23/12/2016	2022 <sup>8</sup>	
Fuqing-6		1 000	HPR-1000	22/12/2015	2021 <sup>9</sup>	yes
Hongyanhe-6		1 000	ACPR-1000+	24/07/2015	2022 <sup>10</sup>	yes
Sanaocun-1		1 117	HPR-1000	31/12/2020	2026 <sup>11</sup>	
Shidao Bay 1-1 <sup>12</sup>		100	HTR-PM	01/12/2012	2021 <sup>13</sup>	yes
Shidao Bay 1-2		100	HTR-PM	01/12/2012	2021 <sup>14</sup>	yes
Shidao-Bay 2-1 <sup>15</sup>		1 400	CAP1400	04/2019 <sup>16</sup>	2024 <sup>17</sup>	
Shidao-Bay 2-2		1 400	CAP1400	11/2019 <sup>18</sup>	2024 <sup>19</sup>	
Taipingling-1		1 116	HPR-1000	26/12/2019 <sup>20</sup>	2025 <sup>21</sup> (grid connection)	
Taipingling-2		1 116	HPR-1000	15/10/2020	2026 <sup>22</sup> (grid connection)	
Tianwan-7		1 100	VVER V-491	19/05/2021	2026 <sup>23</sup>	
Xiapu-1		600	CFR-600	29/12/2017	2023 <sup>24</sup>	
Xiapu-2		600	CFR-600	29/12/2020 <sup>25</sup>	2026 <sup>26</sup>	
Xudabao-3		1 100	VVER V-491	19/05/2021	2027 <sup>27</sup>	
Zhangzhou-1		1 000	HPR-1000	16/10/2019 <sup>28</sup>	2024 <sup>29</sup> (grid connection)	
Zhangzhou-2		1 000	HPR-1000	04/09/2020 <sup>30</sup>	2025 <sup>31</sup>	
<b>FINLAND</b>	<b>1</b>	<b>1 600</b>				
Olkiluoto-3		1 600	EPR	12/08/2005	2/2022 <sup>32</sup>	yes
<b>FRANCE</b>	<b>1</b>	<b>1 600</b>				
Flamanville-3		1 600	EPR	03/12/2007	2023 <sup>33</sup>	yes

Country	Units	Capacity MW net	Model	Construction Start (dd/mm/yyyy)	Expected Grid Connection	Delayed
<b>INDIA</b>	<b>7</b>	<b>5 194</b>				
Kakrapar-4		630	PHWR-700	22/11/2010	February 2022 <sup>34</sup> (commissioning)	yes
Kudankulam-3		917	VVER V-412	29/06/2017	2024 <sup>35</sup>	yes
Kudankulam-4		917	VVER V-412	23/10/2017	2025 <sup>36</sup>	yes
Kudankulam-5		1 000	VVER V-412	29/06/2021 <sup>37</sup>	2026/2027 <sup>38</sup>	
PFBR		470	FBR	23/10/2004	10/2022 <sup>39</sup>	yes
Rajasthan-7		630	PHWR	18/07/2011	02/2022 <sup>40</sup> (expected completion)	yes
Rajasthan-8		630	PHWR	30/09/2011	03/2023 <sup>41</sup> (commercial operation)	yes
<b>IRAN</b>	<b>1</b>	<b>1 196</b>				
Bushehr-2		1196	VVER V-446	02/1976 <sup>42</sup>	2024	yes
<b>JAPAN</b>	<b>1</b>	<b>1 325</b>				
Shimane-3		1325	ABWR	12/10/2007	2025 <sup>43</sup>	yes
<b>Pakistan</b>	<b>1</b>	<b>1 014</b>				
Kanupp-3		1 014	HPR-1000	31/05/2016	2022 <sup>44</sup> (expected operation)	
<b>RUSSIA</b>	<b>3</b>	<b>2 650</b>				
BREST-OD-300		300	FBR	08/06/2021 <sup>45</sup>	2026	
Kursk 2-1		1 115	VVER V-510	29/04/2018	04/2022 <sup>46</sup>	
Kursk 2-2		1 115	VVER V-510	15/04/2019	2023 <sup>47</sup>	
<b>SLOVAKIA</b>	<b>2</b>	<b>880</b>				
Mochovce-3		440	VVER V-213	01/01/1985	2021 <sup>48</sup>	yes
Mochovce-4		440	VVER V-213	01/01/1985	2023 <sup>49</sup>	yes
<b>SOUTH KOREA</b>	<b>4</b>	<b>5 360</b>				
Shin-Hanul-1		1 340	APR-1400	10/07/2012	3/2022 <sup>50</sup> (commercial operation)	yes
Shin-Hanul-2		1 340	APR-1400	19/06/2013	3/2023 <sup>51</sup> (commercial operation)	yes
Shin-Kori-5		1 340	APR-1400	03/04/2017	2024 <sup>52</sup>	yes
Shin-Kori-6		1 340	APR-1400	20/09/2018	2025 <sup>53</sup>	yes
<b>TURKEY</b>	<b>3</b>	<b>3 342</b>				
Akkuyu-1		1 114	VVER V-509	03/04/2018	2024 <sup>54</sup>	yes
Akkuyu-2		1 114	VVER V-509	08/4/2020	2025 <sup>55</sup>	
Akkuyu-3		1 114	VVER V-509	10/03/2021	2026 <sup>56</sup>	
<b>UAE</b>	<b>3</b>	<b>4 035</b>				
Barakah-2		1 345	APR-1400	30/05/2013	2021 <sup>57</sup>	yes
Barakah-3		1 345	APR-1400	24/09/2014	2022 <sup>58</sup>	yes
Barakah-4		1 345	APR-1400	30/07/2015	2023 <sup>59</sup>	yes

Country	Units	Capacity MW net	Model	Construction Start (dd/mm/yyyy)	Expected Grid Connection	Delayed
<b>UK</b>	<b>2</b>	<b>3 260</b>				
Hinkley Point C-1	1	1 630	EPR-1750	11/12/2018 <sup>60</sup>	2026 <sup>61</sup>	yes
Hinkley Point C-2	1	1 630	EPR-1750	12/12/2019 <sup>62</sup>	2027 <sup>63</sup>	yes
<b>USA</b>	<b>2</b>	<b>2 234</b>				
Vogtle-3		1 117	AP-1000	12/03/2013	2022 <sup>64</sup>	yes
Vogtle-4		1 117	AP-1000	19/11/2013	2023 <sup>65</sup>	yes
<b>World</b>	<b>53</b>	<b>54 047</b>		<b>1976–2021</b>	<b>2021–2027</b>	<b>31</b>

Sources: Various, compiled by WNISR, 2021

1 - Further delayed. In 2019, CAREM was rescheduled to begin operating in late 2021 or 2022. The construction, suspended in 2019 “due to breaches by contractor companies”, was expected to restart in May 2020, with no indication about the impact this would have on project’s timeline. See *NEI*, “Work resumes on nuclear projects in Argentina”, 23 April 2020, see <https://www.neimagazine.com/news/newswork-resumes-on-nuclear-projects-in-argentina-7887154>, accessed 30 July 2020.

In July 2021 CNA announced that NA-SA had been contracted to complete the reactor, and that “this new contract establishes a duration of 36 months to complete the reactor building”. CNEA, “CNEA y la empresa NA-SA firman un contrato para completar la construcción del CAREM”, Press Release, 5 July 2021 (in Spanish), see <https://www.argentina.gob.ar/noticias/cnea-y-la-empresa-na-sa-firman-un-contrato-para-completar-la-construccion-del-carem>, accessed 8 July 2021.

2 - Rosatom, “First concrete poured at the constructed Rooppur NPP site (Bangladesh)”, Press Release, 30 November 2017, see <http://www.rusatom-overseas.com/media/news/first-concrete-poured-at-the-site-constructed-npp-rooppur-bangladesh.html/>, accessed 17 August 2020.

3 - Rosatom, “Main construction of the 2nd Unit of Rooppur NPP begins with the ‘First Concrete’ ceremony”, Press Release, 14 July 2018, see <http://rosatom.ru/en/press-centre/news/main-construction-of-the-2nd-unit-of-rooppur-npp-begins-with-the-first-concrete-ceremony/>, accessed 15 July 2018.

4 - Further delayed. In early 2020, startup of Belarusian-2 was officially delayed to 2021. BelTA, “Second reactor of Belarusian nuclear power plant getting flushed, cleansed”, 17 June 2020, see [https://atom.belta.by/en/belaes\\_en/view/second-reactor-of-belarusian-nuclear-power-plant-getting-flushed-cleansed-10678/](https://atom.belta.by/en/belaes_en/view/second-reactor-of-belarusian-nuclear-power-plant-getting-flushed-cleansed-10678/), accessed 16 July 2020. As of July 2021, fuel loading and criticality are expected in autumn 2021, and commercial operation in 2022. *Platts Nuclear News Flashes*, “Belarus Ostravets-2 nuclear plant first criticality expected in autumn: minister”, 21 May 2021.

5 - The HPR-1000 also goes by the name Hualong One.

6 - Construction period is expected to be 60 months. *NEI*, “First concrete poured for China’s Changjiang 3”, 1 April 2021, see <https://www.neimagazine.com/news/newsfirst-concrete-poured-for-chinas-changjiang-3-8644649>, accessed 2 April 2021.

7 - No information concerning expected startup date in CGN’s announcement of construction start. CGN’s Annual Reports for 2016 to 2020 refer to 2022 as “Expected Date of Commencement of Operation” for Fangchenggang-3 and -4. Sources in China suggested that because the two units are the first HPR-1000 to be constructed, grid connection appears impossible before 2020–21 for Unit 3 and 2021–22 for Unit 4, although CGN has pledged to do its utmost to connect its first domestic Generation III reactor to the grid in 2021, at the earliest in November 2021. WNISR2019 advanced the date for the first reactor from 2022 to 2021.

8 - CGN, “Annual Report 2020”, 2021, see <http://en.cgnp.com.cn/encgnp/c100882/2021-04/08/c95f2296e95a4a4ab8a1d7b749996bb43/files/72fd1f144fa44cefba5496fb45eaaab6.pdf>, accessed 1 June 2021.

9 - Delayed. The completion date announced at construction start was 2020. See *WNN*, “First concrete for sixth Fuqing unit”, 22 December 2015, see <http://www.world-nuclear-news.org/NN-First-concrete-for-sixth-Fuqing-unit-2212154.html>, accessed 26 June 2016. Grid connection is expected in 2021. *CNNC*, “First Hualong One begins commercial operation”, 2 February 2021, see [https://en.cnncc.com.cn/2021-02/02/c\\_586987.htm](https://en.cnncc.com.cn/2021-02/02/c_586987.htm), accessed 30 June 2021.

10 - Delayed. In January 2020, CGN announced that operation of Hongyanhe-6 was delayed to 2022, a delay of six months. CGN Power, “Inside Information - Operation Briefings for the Fourth Quarter of 2019”, 6 January 2020, see <http://en.cgnp.com.cn/encgnp/c20191226/202001/917f4904f06d4826be1ae98e96780703/files/0627a0191ddb4a07bcfeb4764a196e4.pdf>, accessed 12 January 2020. See also CGN, “Annual Report 2020”, 2021.

11 - CGN, “Annual Report 2020”, 2021.

12 - IAEA-PRIS reports the twin High Temperature Reactors (HTR-PM) being under construction at the Shidao Bay site plant as consisting of one 200-MW unit. Accordingly, in previous WNISR editions, Shidao Bay-1 has been accounted for as one unit. However, it turns out that Shidao Bay-1 (also called Shidaowan-1) consists of two 100-MW reactors, and consequently, as of WNISR2020, they are considered separately, i.o.w. as two units under construction (Shidao Bay 1-1 and 1-2). See CNEA, “Key components of second HTR-PM reactor connected”, n.d., see <http://en.china-nea.cn/site/content/176.html>, accessed 10 May 2020.

13 - Repeatedly delayed. Grid connection is now expected in 2021, see Fu Li, “Chinese HTR Program”, presented at the IFNec SMR Webinar Series, 23 June 2020, see [https://www.ifnec.org/ifnec/upload/docs/application/pdf/2020-06/slides\\_deck\\_-\\_webinar\\_4.pdf](https://www.ifnec.org/ifnec/upload/docs/application/pdf/2020-06/slides_deck_-_webinar_4.pdf), accessed 5 July 2020. The first fuel was shipped to the site in January 2021, but as of 1 July 2021, no information on fuel loading has

been published. See CNNC, “World’s first HTGR nuclear fuel elements shipped”, 12 January 2021, see [http://en.cnncc.com.cn/2021-01/12/c\\_581651.htm](http://en.cnncc.com.cn/2021-01/12/c_581651.htm), accessed 14 January 2021.

14 - Twin reactor. See previous note.

15 - Provisional names for the two CAP1400 at Rongcheng/Shidaowan. Construction of those reactors was introduced in WNISR stats in 2020 following *NIW* articles (in particular 10 July 2019) and confirmation from sources in China. In July 2019, *NIW* classified them as “under construction” on the basis of the NNSA map as of June 2019. See *NIW*, “Why the Secrecy Over Reactor Construction Start?”, 12 July 2019.

16 - According to sources in China, first basemat concrete for the first CAP1400 reactor was poured on 8 April 2019. See also C.F. Yu, “CGN’s Taipingling Project Moves Ahead”, *NIW*, 20 December 2019. See previous note.

17 - No official startup dates at this point. According to sources in China, the expected construction duration of CAP1400 from Zheng Mingguang is about 56 months. WNISR2021 uses 2024 as expected grid connection.

18 - According to sources in China, first basemat concrete for the second CAP1400 reactor was poured in November 2019. See previous notes.

19 - No official startup dates at this point. WNISR2021 uses 2024 for grid connection date. See previous notes.

20 - CGN, “Annual Report 2019”, CGN Power, April 2020, see <http://en.cgnp.com.cn/encgnp/c100882/202004/f3c2053b65c4cf3a41583190c02057c/files/a5bc0c2ac79c425398a2296b2b054005.pdf>, accessed 2 April 2020.

21 - CGN, “Annual Report 2020”, 2021.

22 - CGN, “Annual Report 2020”, 2021. (Changed from 2025 in WNISR2020).

23 - According to sources in China, the contract between China and Russia stipulated a construction duration of 65 months. Rosatom stated about the Tianwan-7 and -8 project “the units are scheduled to be commissioned in 2026-2027”. See Rosatom, “Start of new unit construction at China’s Tianwan and Xudapu nuclear power plants”, Press Release, 19 May 2021, see <https://rosatom.ru/en/press-centre/news/start-of-new-unit-construction-at-china-s-tianwan-and-xudapu-nuclear-power-plants/>, accessed 14 June 2021.

24 - *WNN*, “China begins building pilot fast reactor”, 29 December 2017, see <http://www.world-nuclear-news.org/NN-China-begins-building-pilot-fast-reactor-2912174.html>, accessed 30 December 2017.

25 - Not listed in IAEA-PRIS. *NEI*, “China begins construction of second CFR-600 fast reactor”, 4 January 2021, see <https://www.neimagazine.com/news/newschina-begins-construction-of-second-cfr-600-fast-reactor-8435608>, accessed 5 January 2021.

26 - No official information about construction start/expected grid connection. WNISR2021 uses 2026.

27 - No official startup date at this point. According to sources in China, the expected construction duration of VVER-1200/V491 is 69 months. Rosatom stated about the Xudabao Project, “the units are expected to be commissioned in 2026-2027”.

See Rosatom, “Start of new unit construction at China’s Tianwan and Xudapu nuclear power plants”, 19 May 2021, see <https://rosatom.ru/en/press-centre/news/start-of-new-unit-construction-at-china-s-tianwan-and-xudapu-nuclear-power-plants/>, accessed 14 June 2021.

28 - CNNC, “CNNC’s Zhangzhou nuclear plant goes into construction”, 23 December 2019, see [https://en.cnncc.com.cn/2019-12/23/c\\_435889.htm](https://en.cnncc.com.cn/2019-12/23/c_435889.htm), accessed 17 January 2020.

29 - No official startup date. Construction duration of Hualong One design given as 60 months.

30 - *WNN*, “Zhangzhou unit 2 construction starts”, 4 September 2020, see <https://www.world-nuclear-news.org/Articles/Construction-starts-of-second-Zhangzhou-unit>, accessed 4 September 2020.

31 - No official startup date. Construction duration of Hualong One design given as 60 months.

32 - Further delayed. Grid connection is expected in February 2022, a further delay of about nine months compared to WNISR2020. See TVO, “The regular electricity production of OL3 EPR will be postponed due to extension of turbine overhaul”, 20 August 2021, see <https://www.tvo.fi/en/index/news/pressreleasesstockexchangereleases/2021/theregularelectricityproductionofol3eprwillbepostponedduetoextensionofturbineoverhaul.html>, accessed 29 August 2021. As of 1 July 2021, hot functional test was ongoing. TVO, “Olkiluoto 3 prepares for first criticality”, 30 June 2021, see <https://www.tvo.fi/en/index/news/pressreleasesstockexchangereleases/2021/olkiluoto3preparesforfirstcriticality.html>, accessed 1 July 2021.

33 - Probably further delayed. Delayed many times from its original planned startup date of 2012. Latest provisional dates are fuel loading by the end of 2022 and grid connection in 2023. However, there are many uncertainties and EDF warned that “The risk relating to the schedule and completion cost is therefore very high and the project could face other potentially significant additional costs and delays in the event of new contingencies...”; see EDF, “Universal Registration Document 2020—Annual Financial Report”, filed 15 March 2021, see <https://www.edf.fr/en/the-edf-group/dedicated-sections/investors-shareholders/reference-documents>, accessed 26 July 2021.

34 - Further delayed (five months since WNISR2021). MoSPI, “Project Implementation Status Report of Central Sector Projects Costing Rs. 150 crore & above (January-March, 2021)”, Ministry of Statistics and Programme Implementation, 2021, see <http://www.cspm.gov.in/english/qr/QPSIR4thQTR2020-21.pdf>, accessed 30 June 2021.

35 - Delayed. Although NPCIL, still uses 2023 for Kudankulam-3 & -4 as expected date of commercial operation, *NIW* reports that “Units 3 and 4 ... will now be completed in September 2024 and March 2025, respectively, according to a government document.” Rakesh Sharma, “Kudankulam-5 Construction Start Marks New Milestone”, *NIW*, 2 July 2021.

36 - Delayed. See previous note.

- 37 - Rosatom, “ROSATOM begins construction of Kudankulam NPP Unit 5 in India”, 29 June 2021, see <https://rosatom.ru/en/press-centre/news/rosatom-begins-construction-of-kudankulam-npp-unit-5-in-india/>, accessed 30 June 2021.
- 38 - The expected construction duration of Kudankulam-5 is 66 months., Lok Sabha, “Unstarred Question No.2756: Kudankulam Nuclear Power Plant”, Department of Atomic Energy, Answered by Jitendra Singh, Minister of State for Personnel, Public Grievances & Pensions and Prime Minister’s Office, Government of India, 10 March 2021.
- 39 - Repeatedly delayed. Operation is now expected in October 2022, a delay of one year compared to WNISR2020. Lok Sabha, “Unstarred Question No. 330: Construction of PFBR”, Department of Atomic Energy, Answered by Jitendra Singh, Minister of State for Personnel, Public Grievances, Pensions and Prime Minister’s Office, Government of India, 3 February 2021, see <https://dae.gov.in/writereaddata/lusq%20330.pdf>.
- 40 - Delayed. As of March 2020, anticipated date for commissioning was March 2022, a year and a half delay compared to WNISR2019. Rajya Sabha, “Unstarred Question No. 1602: Commissioning of heavy water reactor at Kakrapar Nuclear Plant”, Department of Atomic Energy, Answered by Jitendra Singh, Minister of State for Personnel Public Grievances & Pensions and Prime Minister’s Office, Government of India, 5 March 2020. No detail in 2021 in MoSPI, “Project Implementation Status Report of Central Sector Projects Costing Rs. 150 crore & above (January-March, 2021)”, 2021, op. cit.
- 41 - Repeatedly delayed. No indications of changes since WNISR2020. MoSPI, “Project Implementation Status Report of Central Sector Projects Costing Rs. 150 crore & above (January-March, 2021)”, 2021, op. cit.
- 42 - Original construction of Bushehr-2 had started in February 1976, and the reactor remained listed as under construction in PRIS-IAEA, “Nuclear Power Reactors in the World”, until the 1994 edition. See WNISR, “Iran: Construction Restart of Busheer-2”, 14 November 2019, see <https://www.worldnuclearreport.org/Iran-Construction-Restart-of-Busheer-2.html>.
- 43 - Construction status unclear. 2025 based on WNISR estimates.
- 44 - Reportedly delayed to first quarter 2022, see *The News*, “PM Imran Khan inaugurates 1,100 MW Chinese-built nuclear power plant”, 21 May 2021, see <https://www.thenews.com.pk/latest/837916-pm-imran-khan-inaugurates-1100-mw-chinese-built-nuclear-power-plant>, accessed 22 July 2021, from planned startup in 2021, see “PNRA Annual Report 2018”, 2019 and “PNRA Annual Report 2019”, 2020.
- 45 - Rosatom, “ROSATOM starts construction of unique power unit with BREST-OD-300 fast neutron reactor”, 8 June 2021, see <https://www.rosatom.ru/en/press-centre/news/rosatom-starts-construction-of-unique-power-unit-with-brest-od-300-fast-neutron-reactor/>, accessed 5 July 2021.
- 46 - WNA, “Nuclear Power in Russia”, Updated May 2021, see <https://www.world-nuclear.org/information-library/country-profiles/countries-o-s/russia-nuclear-power.aspx>, accessed 30 July 2021.
- 47 - Ibidem.
- 48 - Further delayed. Fuel loading and startup expected in 2021. Slovenské elektrárne, “Slovenské elektrárne approaches the commissioning of Mochovce 3”, 13 May 2021, see <https://www.seas.sk/article/slovenske-elektrarne-approaches-the-commissioning-of-mochovce-3/441>, accessed 30 June 2021.
- 49 - Further delayed. Fuel loading of Mochovce-3 is expected in 2023.
- 50 - Further delayed since WNISR2020. As of July 2021, Commercial operation is expected in March 2022 (almost 1.5 year delay compared to WNISR2020), with fuel loading taking place in July 2021. KEPCO, “Acquisition of Operating License for Shin-Hanul Unit 1 and First Fuel Loading”, 16 July 2021, see <https://www.kepco-enc.com/eng/selectBbsNttView.do?key=1621&bbsNo=342&nttNo=37370&searchCtgr=&searchCnd=all&searchKrdw=&pageIndex=1&integrDeptCode=>, accessed 27 July 2021.
- 51 - Further delayed since WNISR2020. As of June 2021, Commercial operation is expected in March 2023 (over 1.5 year delay compared to WNISR2020). KHNP, “Nuclear Power Construction—Shin-Hanul #1,2”, Various Dates, see <https://cms.khnp.co.kr/eng/content/547/main.do?mnCd=EN03020303>, last accessed 30 June 2021.
- 52 - Delayed. Construction officially started in April 2017, suspended in July to resume October of the same year. Commercial operation at construction start was October 2021, it is now expected in March 2023, almost 1.5 year of delay. KHNP, “Nuclear Power Construction – Shin-Kori #5,6”, Various Dates, see <http://cms.khnp.co.kr/eng/content/548/main.do?mnCd=EN03020304>, last accessed 30 June 2021. However, in March 2021, KHNP applied for an extension of the construction license, with a completion schedule for Shin Kori-5 now extended one additional year until 31 March 2024, and for Shin Kori-6, nine months later to 31 March 2025.
- 53 - Delayed. KHNP, “Nuclear Power Construction—Shin-Kori #5,6”, Various dates, see <http://cms.khnp.co.kr/eng/content/548/main.do?mnCd=EN03020304>, last accessed 30 June 2021. See previous note.
- 54 - Delayed. In March 2019, the project management announced that it had finished the concreting of the basemat for the nuclear island and that it was now expected that Akkuyu-1 would be physically completed in 2023, with generation coming at a later date. Phil Chaffee, “New Build, Revised 2023 Milestone for Akkuyu”, *NiW*, 29 March 2019.
- 55 - Official startup date is often quoted as 2024, but WNISR2021 uses a 5-year construction period. *Daily Sabah*, “Construction starts on 2nd unit of Turkey’s 1st nuclear power plant Akkuyu”, 28 June 2020, see <https://www.dailysabah.com/business/energy/construction-starts-on-2nd-unit-of-turkeys-1st-nuclear-power-plant-akkuyu>, accessed 28 June 2020.
- 56 - The Akkuyu reactors are officially to be completed one per year starting in 2023. See *WNN*, “Akkuyu construction to be completed by 2026, says project CEO”, 10 February 2021, see <https://www.world-nuclear-news.org/Articles/Akkuyu-fully-operational-by-2026,-says-project?feed=feed>, accessed 10 April 2021. However, WNISR2021 keeps a 5-year construction time, and a one-per-year startup frequency, beginning with Akkuyu-1 in 2024.

57 - Delayed. Fuel loading was completed at the end of March 2021, and startup is expected later in 2021. See ENEC, “Unit 1 of Barakah Plant Started Commercial Operations”, 6 April 2021, see <https://www.enec.gov.ae/news/latest-news/unit-1-of-barakah-plant-started-commercial-operations/>, accessed 30 June 2021. Connected to the grid on 14 September 2021.

58 - Delayed. WNISR2021 keeps 2022, a three-year delay compared to original schedule.

59 - Delayed. WNISR2021 keeps 2023, a three-year delay compared to original schedule.

60 - See WNISR, “The Oddly Discreet Construction Start of Hinkley Point C”, 29 December 2018, see <https://www.worldnuclearreport.org/The-Oddly-Discreet-Construction-Start-of-Hinkley-Point-C.html>, accessed 24 August 2019.

61 - First delay acknowledged. EDF, “Hinkley Point C project update”, Press Release, 27 January 2021, see <https://www.edf.fr/en/the-edf-group/dedicated-sections/journalists/all-press-releases/hinkley-point-c-project-update-1>, accessed 27 January 2021.

62 - See WNISR, “Strangely Belated Announcement of Hinkley Point C-2 Construction Start”, 18 March 2020, see <https://www.worldnuclearreport.org/Strangely-Belated-Announcement-of-Hinkley-Point-C-2-Construction-Start.html>.

63 - No official startup date announced at construction start. Although there is no official confirmation of delay at this point, EDF acknowledged the delay for HPC-1, and stated “the risk of COD [Commercial Operation Date] delay of Units 1 and 2 is maintained at respectively 15 and 9 months” and “the level of probability remains high” for the realization of this risk. WNISR2021 thus considers both units as delayed.

64 - Further delayed. “The company currently projects a Unit 3 in-service date in the second quarter of 2022 and a Unit 4 in-service date in the first quarter of 2023”. Georgia Power, “Georgia Power announces revised schedule, cost forecast for Vogtle units 3 & 4”, 29 July 2021, see <https://www.georgiapower.com/company/news-center/2021-articles/cost-forecast-for-vogtle.html>, accessed 30 July 2021.

65 - Further delayed. See Previous note.