

# Anticipated joint venture between Brookfield and Cameco to acquire Westinghouse

## Decision on relevant merger situation and substantial lessening of competition

**ME/7062/23**

Please note that [X] indicates figures or text which have been deleted or replaced in ranges at the request of the parties or third parties for reasons of commercial confidentiality.

### SUMMARY

1. The Competition and Markets Authority (**CMA**) has found that the proposed joint venture between Brookfield Corporation (**Brookfield**) and Cameco Corporation (**Cameco**) to acquire Westinghouse Electric Company (**Westinghouse**) (the **Merger** or **Transaction**) does not give rise to a realistic prospect of a substantial lessening of competition (**SLC**) within any markets in the UK for goods and services.
2. Westinghouse is currently owned by Brookfield, a global asset manager, via Brookfield Business Partners LP (**Brookfield Business Partners**) and its affiliates. As part of the Merger, Brookfield will retain a 51% interest in Westinghouse, via Brookfield Renewable Partners LP (**Brookfield Renewable**) and/or its affiliates, while Cameco will acquire a 49% interest. Brookfield, Cameco, and Westinghouse are together referred to as the **Parties**.
3. Westinghouse and Cameco are both active globally in different parts of the nuclear fuel supply cycle. Cameco focuses on uranium mining and services to convert natural uranium concentrate into uranium hexafluoride (**UF<sub>6</sub>**), an intermediate step in the production of nuclear fuel (**natural uranium conversion services**), while Westinghouse focuses on the fabrication of nuclear fuel assemblies (used to deliver nuclear fuel into the core of a nuclear reactor) and the design and servicing of nuclear reactors. Westinghouse and Cameco operate from facilities located in various countries worldwide (including in the UK in the case of Westinghouse).

4. The CMA's investigation focused on the potential future overlap between the Parties in the supply of natural uranium conversion services. The CMA also considered potential conglomerate effects in relation to Westinghouse's supply of fuel assemblies and the Parties' supply of natural uranium conversion services.

### **Loss of future competition in the supply of natural uranium conversion services**

5. Cameco currently supplies natural uranium conversion services through its facilities located in Canada. Westinghouse does not currently supply natural uranium conversion services but is in the process of exploring whether to do so from its Springfields facility in the UK, where it provided these services until 2014.
6. The CMA considered the likelihood of Westinghouse entering in the supply of natural uranium conversion services absent the Merger, and whether, as a result of the Merger, a loss of future competition would arise between Westinghouse and Cameco. The CMA based its assessment on a range of evidence, including the Parties' submissions, internal documents, data from the Parties and their competitors, and third-party views.
7. The CMA found that, absent the Merger, there is, at a minimum, a realistic prospect that Westinghouse would have re-entered the supply of natural uranium conversion services by around 2028. The CMA considered that Westinghouse had relatively well-developed plans to enter within this timeframe and has taken some significant steps towards entry, including obtaining Government funding to support scoping of the project and initial engagement with [REDACTED]. The CMA also found that Westinghouse had the ability and incentive to enter.
8. However, the CMA found that Westinghouse's potential entry would not give rise to a realistic prospect of a substantial loss of future competition with Cameco. Although there is significant uncertainty regarding future market conditions, the evidence indicates that by 2028, Westinghouse would likely be the [REDACTED] largest supplier of natural uranium conversion services globally (excluding China) by capacity, and Cameco would likely be the [REDACTED] largest. The evidence indicates that the remaining competitors on the market would sufficiently discipline the commercial behaviour of Cameco post-Merger. In particular, Cameco is likely to face strong constraints from Orano and ConverDyn, as it does currently, and a moderate constraint from Rosatom.
9. Cameco is also likely to face an additional (albeit likely weaker) constraint from suppliers of enrichment services, such as Urenco, which, under certain

circumstances, have surplus UF<sub>6</sub> for sale (by using less UF<sub>6</sub> to produce the same volume of enriched uranium in a process known as **underfeeding**).

### **Conglomerate effects**

10. The CMA investigated whether, post-Merger, the Parties could leverage Westinghouse's position in the supply of fuel assemblies to foreclose rival providers of natural uranium conversion services through a bundling or tying strategy of Westinghouse's fuel assemblies and the Parties' natural uranium conversion services to customers.
11. The CMA found that Westinghouse has a strong position in the supply of fuel assemblies in Europe (including in the UK) and North America, specifically in relation to light-water reactors (also known as non-Canada Deuterium Uranium (**non-CANDU**) reactors). However, the available evidence indicated that utility customers prefer to purchase natural uranium conversion services and fuel assemblies separately, and to purchase natural uranium conversion services from multiple suppliers. Utility customers also indicated that they would strongly resist any attempt by the Parties to pursue a bundling or tying strategy.
12. As a result, the CMA found that the Parties would not have the ability to foreclose rival suppliers of natural uranium conversion services by leveraging Westinghouse's power in non-CANDU fuel assemblies. The CMA also considered that the Parties would be unlikely to have the incentive to engage in such a strategy.
13. The CMA therefore considers that the Merger does not give rise to a realistic prospect of an SLC as a result of either a loss of future competition in the supply of natural uranium conversion services or as a result of conglomerate effects.
14. The Merger will therefore **not be referred** under section 33(1) of the Enterprise Act 2002 (the **Act**).

# ASSESSMENT

## PARTIES

### Brookfield

15. Brookfield is a global asset manager headquartered in Toronto, Canada, that offers a range of public and private investment products and services. Brookfield is co-listed on the New York and Toronto stock exchanges. Its investment focus is on renewable power and transition, infrastructure, private equity, real estate, credit and insurance.
16. Brookfield operates via a number of publicly traded limited partnerships, including Brookfield Business Partners, which owns and operates the private equity division of Brookfield, and Brookfield Renewable, which owns and operates the renewable power and transition asset division of Brookfield.
17. Brookfield's turnover in 2022 was £[<]worldwide and £[<] in the UK.<sup>1</sup>

### Cameco

18. Cameco is a global provider of uranium products and services, headquartered in Saskatoon, Canada. Cameco is co-listed on the New York and Toronto stock exchanges.<sup>2</sup>
19. Cameco is principally active in the operation of uranium mining and production facilities in Canada, Kazakhstan (via a minority joint venture interest) and the United States. Additionally, Cameco's fuel services division, based in Canada, is active in the conversion of natural uranium concentrate both to ceramic-grade natural uranium dioxide (**UO<sub>2</sub>**) and UF<sub>6</sub>, and the fabrication of fuel assemblies for use in Canada Deuterium Uranium (**CANDU**) reactors, which are Canadian pressurized heavy-water reactors.
20. Cameco's turnover in 2022 was £1,147.9 million worldwide and £[<] in the European Economic Area (**EEA**).<sup>3</sup>

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<sup>1</sup> Final Merger Notice submitted by the Parties on 7 September 2023 (**FMN**), paragraph 70.

<sup>2</sup> FMN, paragraph 10.

<sup>3</sup> FMN, paragraph 71. Cameco submitted that it cannot reliably determine its UK turnover. Cameco submitted that it has [<] for uranium concentrate, which ultimately feeds into [<]. Cameco does not have full visibility of the [<]. Cameco also supplies uranium concentrate and services to convert uranium concentrate to UF<sub>6</sub> to [<]. However, Cameco submitted that it understands that [<]. Cameco cannot therefore verify whether any of its sales are ultimately used in [<].

## Westinghouse

21. Westinghouse is headquartered in Pennsylvania, United States, and is currently controlled by investment entities related to Brookfield Business Partners and other Brookfield affiliates, which are all ultimately controlled by Brookfield. Brookfield acquired Westinghouse in 2018 as part of Westinghouse's exit from Chapter 11 bankruptcy in the United States.<sup>4</sup>
22. Westinghouse is active in providing services to nuclear power plants (including in the UK), including the design of nuclear power plants, the provision of safety and operational instrumentation and control systems to nuclear power plants, and the provision of servicing to nuclear power plants. Westinghouse also has activities in the provision of nuclear fuel to utility customers that operate certain designs of non-CANDU nuclear reactors, and currently provides fuel to the multinational utility company, EDF, for use in the UK's existing fleet of Advanced Gas Cooled reactors (**AGRs**), a type of non-CANDU reactor.<sup>5</sup> Westinghouse also participates in the decontamination, decommissioning and remediation of nuclear power plant sites, including to shut down reactors in the UK.
23. Westinghouse owns and operates the UK's only fuel fabrication facility in Springfields, Preston.
24. Westinghouse's turnover in 2022 was €[X] and £[X] in the UK.<sup>6</sup>

## TRANSACTION

25. The Merger involves a joint venture by which Brookfield and Cameco will jointly own Westinghouse.
26. Pursuant to an Equity Purchase Agreement signed on 11 October 2022, Brookfield will retain a 51% interest in Westinghouse, albeit with ownership transferred from investment entities related to Brookfield Business Partners and other Brookfield affiliates to investment entities related to Brookfield Renewable and/or its affiliates, while Cameco will acquire a 49% interest. The consideration for the Transaction was \$7.85 billion (on an enterprise value basis).<sup>7</sup>

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<sup>4</sup> FMN, paragraph 14.

<sup>5</sup> FMN, paragraph 20. AGRs have been built in the UK since the 1960s. See also [Advancer Gas-cooled reactors – Westinghouse](#).

<sup>6</sup> FMN, paragraph 71.

<sup>7</sup> FMN, paragraph 27.

27. The Parties informed the CMA that the Merger is also subject to review by the European Commission.

## TRANSACTION RATIONALE

28. Brookfield submitted that the Transaction aligns with Brookfield Renewable's investment focus on the ownership, operation and development of clean energy projects.<sup>8</sup>
29. Cameco submitted that the Transaction represents an opportunity to further participate in the growing momentum for nuclear energy, and in particular to generate a stable cash flow to complement Cameco's existing businesses, create new revenue opportunities and expand its participation in the nuclear fuel value chain.<sup>9</sup>
30. The CMA considers that Brookfield and Cameco's internal documents are generally consistent with the rationales stated above.<sup>10</sup>

## PROCEDURE

31. The CMA's mergers intelligence function identified this Transaction as warranting an investigation.<sup>11</sup>

## JURISDICTION

32. A relevant merger situation exists where there are arrangements in progress or in contemplation which, if carried into effect, will lead to two or more enterprises ceasing to be distinct and either the turnover or the share of supply test is met.<sup>12</sup>
33. Each of Brookfield, Cameco and Westinghouse is an enterprise within the meaning of section 129 of the Act. As a result of the Merger, Brookfield will retain a majority 51% interest in Westinghouse, while Cameco will acquire a 49% interest in, and material influence over, Westinghouse within the meaning of Section 26 of the Act.

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<sup>8</sup> FMN, paragraph 33.

<sup>9</sup> FMN, paragraph 32.

<sup>10</sup> For example, Brookfield Internal Document, Annex 9.1.1 to the FMN, slide 9 [§<], Westinghouse Internal Document, Annex 9.1.13 to the FMN, slides 5, 7 and 10, [§<], Brookfield Internal Document, Annex 9.1.14 to the FMN, slides 2 and 3, [§<].

<sup>11</sup> Mergers: Guidance on the CMA's jurisdiction and procedure, January 2021 ([CMA2](#)), paragraphs 6.4-6.6

<sup>12</sup> [CMA2](#), Chapter 4; section 23 of the Act.

Specifically, pursuant to the terms of a Shareholders' Agreement signed on 11 October 2022:

- (a) Brookfield and Cameco will each have the right to appoint an equal number of directors (three) to Westinghouse's board of directors, with votes of the board decided in the same proportions as Brookfield's and Cameco's equity. Brookfield and Cameco will therefore hold 51% and 49% of the votes of the board respectively. Actions by the board will require the affirmative vote of directors whose votes collectively represent at least a majority of the equity.
- (b) Certain strategic decisions will require the approval of at least one director appointed by Brookfield and at least one director appointed by Cameco.<sup>13</sup> This includes decisions regarding approval of or amendments to Westinghouse's long-term strategic plan, annual budget and business plan, as well as the appointment and termination of Westinghouse's CEO and CFO.

- 34. Accordingly, Cameco will acquire material influence over and cease to be distinct from Westinghouse.
- 35. On 7 September 2023, the Parties entered into an Amendment to the Shareholders' Agreement to limit the scope of Cameco's voting and information rights over Westinghouse (the **SHA Amendment**).<sup>i</sup> Pursuant to the SHA Amendment, Cameco will not acquire any voting rights or information rights in relation to any supply by Westinghouse in the future of natural uranium conversion services (including on any decision to enter into those services) and will also be recused from any discussions regarding the same. The Parties are also restricted from modifying or terminating the SHA Amendment without the CMA's prior consent. The Parties submitted that the SHA Amendment means that control of Westinghouse's natural uranium conversion business has been placed outside of the perimeter of the Transaction. The Parties also submitted that the SHA Amendment removes the potential basis on which any SLC can arise in respect of natural uranium conversion services.<sup>14</sup>
- 36. The CMA notes that the ability materially to influence a target's policy does not necessarily imply an ability to control it. It does not amount to an ability to drive policy in a direction to which other shareholders, management or the board object. Rather, it is the ability materially to influence relevant strategic or commercial matters, either positively or negatively.<sup>15</sup> The assessment of material influence

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<sup>13</sup> FMN, paragraph 20.

<sup>14</sup> FMN, paragraphs 22-26.

<sup>15</sup> [Merger between Capital & Counties Properties PLC and Shaftesbury PLC](#) [ME/7008/22], paragraph 22; [Anticipated acquisition by Amazon of a minority shareholding and certain rights in Deliveroo](#) [ME/6836/19], paragraph 4.12.

requires a case-by-case analysis of the overall relationship between the acquirer and the target. In making its assessment, the CMA will have regard to all the circumstances of the case.<sup>16</sup>

37. In the present case, Cameco will have voting rights and information rights in relation to Westinghouse's current and future businesses that do not relate to any future natural uranium conversion business. In particular, Cameco will have the right to vote on whether to invest or enter into those businesses and on how much to invest. The CMA considers that, in the course of exercising such voting rights, Cameco could indirectly influence Westinghouse's overall investment strategy, including in relation to any plans to start supplying natural uranium conversion services. In any case, the CMA also notes that the SHA Amendment is a contractual arrangement which the Parties could at any time modify or terminate (including the current contractual requirement to obtain the CMA's consent before modifying or terminating the SHA Amendment).
38. For these reasons, the CMA has not placed any weight on the SHA Amendment for the purposes of its decision.
39. The UK turnover of Westinghouse exceeds £70 million, so the turnover test in section 23(1)(b) of the Act is satisfied.
40. The CMA therefore believes that it is or may be the case that arrangements are in progress or in contemplation which, if carried into effect, will result in the creation of a relevant merger situation.
41. The initial period for consideration of the Merger under section 34ZA(3) of the Act started on 15 September 2023 and the statutory 40 working day deadline for a decision is therefore 9 November 2023.

## COUNTERFACTUAL

42. The CMA assesses a merger's impact relative to the situation that would prevail absent the merger (ie the counterfactual). For anticipated mergers, the CMA generally adopts the prevailing conditions of competition as the counterfactual against which to assess the impact of the merger.<sup>17</sup>

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<sup>16</sup> [CMA2](#), paragraph 4.18.

<sup>17</sup> [The Merger assessment guidelines \(CMA129\) – 2021 revised guidance](#), from paragraph 3.2.



43. The Parties submitted that the appropriate counterfactual against which to assess the Merger is the prevailing conditions of competition.<sup>18</sup>
44. The CMA notes that Westinghouse is currently considering re-entering the supply of UF<sub>6</sub> conversion services at its Springfields site in the UK. The CMA has considered this in detail in the competitive assessment below. For the reasons given in that assessment, the CMA considers that, at a minimum, there is a realistic prospect that Westinghouse would have re-entered the supply of UF<sub>6</sub> conversion services and therefore has considered the Merger against a counterfactual in which Westinghouse continues in its efforts to re-enter the supply of UF<sub>6</sub> conversion services.<sup>19</sup>

## INDUSTRY BACKGROUND

### The nuclear fuel cycle

45. The nuclear fuel cycle is comprised of four principal stages. These stages and the Parties' main activities in relation to them are as follows (see also Figure 1 below):<sup>20</sup>
- (a) **Mining.** The first stage involves the exploration of uranium deposits and mining the uranium to produce uranium concentrate.<sup>21</sup> Cameco is active at this stage but Westinghouse is not.
  - (b) **Uranium conversion.** At the second stage, the uranium concentrate is typically converted into UF<sub>6</sub> which is the form of uranium required by enrichment facilities, and in turn for non-CANDU reactors. Alternatively, the uranium concentrate may be converted into UO<sub>2</sub> for use as fuel in CANDU reactors, which do not use enriched uranium. This process (for CANDU reactors) is distinct from conversion to UF<sub>6</sub> and requires different facilities. Only a small proportion of nuclear reactors globally are CANDU reactors and there are no current or planned CANDU reactors in the UK.<sup>22</sup>

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<sup>18</sup> Annex Q11 to the FMN.

<sup>19</sup> As per [CMA129](#) paragraphs 3.3 – 3.6, the CMA's conclusion on the counterfactual does not seek to ossify the market at a particular point in time. For example, an assessment based on the prevailing conditions of competition might reflect that, absent the merger under review, a merger firm would have continued making investments in improvements, innovations or new products. In determining the counterfactual, the depth of analysis in the CMA's assessment is usually not to the same level as in its competitive assessment.

<sup>20</sup> There are other processes present in the nuclear fuel cycle, however they are not relevant to the CMA's decision and therefore have not been discussed here.

<sup>21</sup> FMN, paragraph 97. Currently, two-thirds of the world's production of uranium are extracted from mines in Australia, Canada and Kazakhstan. There are a number of suppliers that are active in uranium mining. There is currently no commercial uranium mining in the UK.

<sup>22</sup> FMN, paragraphs 98 and 143.

- (c) There are currently four commercial UF<sub>6</sub> conversion plant operators that supply utility customers globally: Cameco (based in Canada), Orano (based in France), Rosatom (based in Russia) and ConverDyn (based in the US). While most UF<sub>6</sub> conversion plants use natural uranium concentrate as feedstock, the conversion process can also be performed by using re-processed uranium (known as **RepU**) that is recovered from used fuel assemblies and can be further treated for re-use.<sup>23</sup> Rosatom is currently the only commercial operator of a RepU conversion plant.<sup>24</sup> Westinghouse does not currently provide UF<sub>6</sub> (or RepU) conversion services. However, until 2014 Westinghouse supplied natural uranium conversion services at its Springfields site in the UK and has plans to re-enter (and also to supply RepU conversion services), as discussed in the competitive assessment below.
- (d) Utility customers (ie the operators of nuclear power plants) typically purchase uranium concentrate and then separately procure conversion as a service through long-term contracts with suppliers.<sup>25</sup> In addition to purchasing from suppliers that convert natural uranium concentrate into UF<sub>6</sub> (**primary suppliers**), utility customers may also purchase UF<sub>6</sub> (or enriched uranium) from secondary sources of supply. Secondary sources of supply include suppliers of enrichment services, who can obtain UF<sub>6</sub> by purchasing more enrichment capacity and using less UF<sub>6</sub> to produce the same volume of enriched uranium. These producers can then sell the remaining UF<sub>6</sub> in competition with primary suppliers. This process is known as underfeeding.<sup>26</sup>
- (e) **Enrichment.** At the third stage, UF<sub>6</sub> is enriched for use as fuel in non-CANDU reactors.<sup>27</sup> There is currently one uranium enrichment facility in operation in the UK, at Capenhurst in Cheshire, operated by Urenco.<sup>28</sup> Neither Cameco nor Westinghouse are active in enrichment services.
- (f) **Fuel fabrication.** Fuel fabrication is the last stage in the nuclear fuel cycle. Fuel assemblies, which are used to deliver nuclear fuel into the core of a nuclear reactor, are generally designed to meet the specifications of a particular nuclear reactor type. Cameco is active in the supply of fuel

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<sup>23</sup> FMN, paragraphs 99, 159.

<sup>24</sup> FMN, paragraph 99.

<sup>25</sup> FMN, paragraphs 254-259.

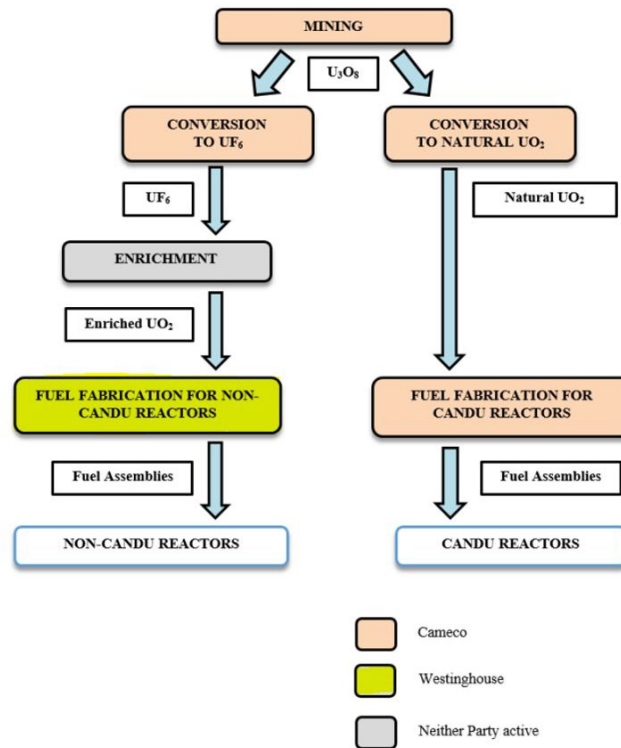
<sup>26</sup> Suppliers of enrichment services can also obtain enriched uranium through the re-enrichment of depleted UF<sub>6</sub>, which is the waste product of the enrichment process. Other secondary sources of supply include material from commercial and government inventories and enriched uranium extracted from nuclear weapons. UxC's Conversion Market Outlook of December 2022.

<sup>27</sup> Enrichment is not required for CANDU reactors.

<sup>28</sup> FMN, paragraph 100.

assemblies for CANDU reactors, whereas Westinghouse is active in the supply of fuel assemblies for non-CANDU reactors (including at its Springfields site in the UK).<sup>29</sup>

Figure 1: Overview of Cameco and Westinghouse's current activities in the nuclear fuel supply chain



## Nuclear energy: the landscape in the UK

46. There are currently nine operational nuclear reactors in the UK, all operated by EDF. The majority of these reactors, all of which are AGRs, are due to be shut down in the next five to seven years.<sup>30</sup> This will leave one operational reactor at Sizewell B.
47. In addition, there are two planned pressurised water reactors (**PWRs**<sup>31</sup>) reactors at Hinkley Point C, which are expected to become operational by 2027.<sup>32</sup> Another PWR reactor is in the early phases of construction at Sizewell C, pending a final

<sup>29</sup> FMN, paragraphs 7 and 103.

<sup>30</sup> Call with Department of Energy Security & Net Zero, 15 May 2023.

<sup>31</sup> PWRs are another type of non-CANDU light-water reactor, which use pressurised water to generate steam in order to drive turbines and generate electricity. FMN, paragraph 95.

<sup>32</sup> Call with Great British Nuclear, 18 July 2023.

financial investment decision from the UK Government (which is expected to take place in 2024).<sup>33</sup> Sizewell C is expected to be online from the late 2030s.<sup>34</sup>

48. As set out in its Energy Security Strategy of 2022, the UK Government's ambition is to triple the UK's nuclear energy capacity to 24GW by 2050 (such that it will represent 25% of Great Britain's projected electricity demand, up from 15% today).<sup>35</sup> It aims to do so by pursuing both large-scale reactors (such as those currently operational in the UK) and investing in small modular reactors (**SMRs**) and Advanced Modular Reactors. SMRs are compact nuclear reactors which can produce up to around 500MW of electricity. They are an emerging technology still in the early stages of development.<sup>36</sup>

## FRAME OF REFERENCE

49. Market definition provides a framework for assessing the competitive effects of a merger and involves an element of judgement. The boundaries of the market do not determine the outcome of the analysis of the competitive effects of the merger, as it is recognised that there can be constraints on merging parties from outside the relevant market, segmentation within the relevant market, or other ways in which some constraints are more important than others. The CMA will take these factors into account in its competitive assessment.<sup>37</sup>
50. The CMA's investigation has focused on the following services offered by the Parties:
- (a) The supply of natural uranium conversion services. Cameco is currently active in the supply of natural uranium conversion services, whereas (as set out in the competitive assessment) the CMA considers that, at a minimum, there is a realistic prospect that Westinghouse would re-enter the supply of natural uranium conversion services absent the Merger.<sup>38</sup>
  - (b) The supply of non-CANDU fuel assemblies. Westinghouse is active in the supply of non-CANDU fuel assemblies, which gives rise to a potential

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<sup>33</sup> See [Funding Sizewell C - Sizewell C](#).

<sup>34</sup> Call with Great British Nuclear, 14 July 2023.

<sup>35</sup> [The Ten Point Plan for a Green Industrial Revolution, page 12](#).

<sup>36</sup> *Anticipated acquisition by Electricite de France SA of the Nuclear Steam Power Business owned by the General Electric Company* [ME/7024/22] ([EDF/GE](#)) paragraph 29 and FMN, paragraph 244.

<sup>37</sup> [CMA129](#), paragraph 9.4.

<sup>38</sup> Westinghouse is also exploring entering the supply of services to convert RepU into UF<sub>6</sub>. Cameco is not active in the supply of RepU conversion services and as set out further below, natural uranium conversion services and RepU conversion services are not substitutable.

conglomerate relationship with Cameco's supply of natural uranium conversion services.

## Supply of natural uranium conversion services

### *Product scope*

#### *Parties' submissions*

51. The Parties submitted that the supply of natural uranium conversion services constitutes a separate product market, distinct from services to convert uranium concentrate into ceramic-grade natural UO<sub>2</sub>.<sup>39</sup> According to the Parties:
- (a) On the demand side, operators of non-CANDU reactors procure services to convert uranium concentrate into UF<sub>6</sub>, while operators of CANDU reactors procure services to convert uranium concentrate into ceramic-grade natural UO<sub>2</sub>. The two types of conversion service UF<sub>6</sub> are therefore not alternatives and cannot be substituted for one another.
  - (b) On the supply side, different conversion plants using different technology are required to convert uranium concentrate into UF<sub>6</sub>, and into ceramic-grade natural UO<sub>2</sub>.<sup>40</sup> Current suppliers of UF<sub>6</sub> conversion services would therefore require significant investments into new facilities and know-how to be able to supply services to convert uranium concentrate into ceramic-grade natural UO<sub>2</sub>.
52. The Parties also submitted that the supply of natural uranium conversion services is distinct from RepU conversion services.<sup>41</sup> According to the Parties:
- (a) On the demand side, reactor fuel derived from RepU requires different reactor core engineering processes and different handling, such as higher levels of enrichment. The Parties therefore submitted that RepU is not a substitute for UF<sub>6</sub>.
  - (b) On the supply side, RepU has much higher radiation levels and needs to be handled separately from natural uranium concentrate to avoid contamination.

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<sup>39</sup> FMN, paragraphs 141-145. These processes are discussed further above in **Industry Background**.

<sup>40</sup> The process to convert uranium concentrate to ceramic-grade natural UO<sub>2</sub> involves adding nitric acid and ammonia, and reducing it. By contrast, uranium concentrate is converted to UF<sub>6</sub> by heating it with hydrogen to reduce it to a non-ceramic grade UO<sub>2</sub>, then mixing it with hydrofluoric acid to produce UF<sub>4</sub>, which is combined with fluorine gas to form UF<sub>6</sub> gas. FMN, paragraph 98.

<sup>41</sup> FMN, paragraphs 141-145 and 160.

Conversion of RepU is therefore more expensive to manufacture than the conversion of natural uranium concentrate.

*CMA's assessment*

53. The CMA considers that natural uranium conversion services are distinct from ceramic-grade natural UO<sub>2</sub> conversion services for the reasons provided by the Parties above. Reflecting this, the Parties' internal documents and other industry reports assessing competitive conditions in natural uranium conversion services do not discuss ceramic-grade natural UO<sub>2</sub> conversion services.<sup>42</sup>
54. Evidence received by the CMA also supports the Parties' submissions that natural uranium conversion services are distinct from RepU conversion services. In particular:
- (a) On the demand side, the Parties' customers and competitors generally indicated that utility customers cannot quickly and easily switch between using fuel derived from RepU and fuel derived from natural uranium. Most competitors indicated that utility customers would not respond to a 5-10% increase in the price of natural uranium conversion services by using more fuel derived from RepU.<sup>43</sup> Further, customers indicated that the decision to use fuel derived from RepU is driven by factors other than the price of natural uranium conversion services and involves additional costs, licencing, and adaptations to the operation of the power plant.<sup>44</sup>
  - (b) On the supply side, evidence from competitors and Westinghouse's internal documents confirmed that RepU conversion services and natural uranium conversion services require separate facilities.<sup>45</sup> Consistent with this, there are significant differences in the conditions of competition between RepU conversion and natural uranium conversion, with Rosatom being the only current supplier of RepU conversion services globally.<sup>46</sup> Westinghouse's internal documents also show that when considering potential entry into RepU

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<sup>42</sup> See for example: Cameco internal document CCO\_CMA\_00005598; UxC's Conversion Market Outlook of December 2022. Additionally, the CMA did not receive any evidence indicating that Cameco's activities in ceramic-grade natural UO<sub>2</sub> conversion confer a competitive advantage in the supply of natural uranium conversions services.

<sup>43</sup> Competitor questionnaire responses [REDACTED].

<sup>44</sup> Customer questionnaire responses [REDACTED].

<sup>45</sup> For example: [REDACTED] (WEC00017260).

<sup>46</sup> FMN, paragraph 277.

conversion, it focuses on the competitive constraint from Rosatom and potential entrants, and not natural uranium conversion suppliers.<sup>47</sup>

55. Therefore, the CMA considers that natural uranium conversion services constitute a separate product market, distinct from RepU conversion services.

### ***Geographic scope***

#### *Parties' submissions*

56. The Parties submitted that the geographic market for natural uranium conversion services is global excluding China.<sup>48</sup>
57. According to the Parties, Chinese conversion suppliers do not generally offer services for export and customers in China do not generally source conversion services outside of China.<sup>49</sup> The Parties also submitted that when the supply of natural uranium conversion services in China exceeds demand, the vast majority of the excess UF<sub>6</sub> is stockpiled for future use by Chinese utility customers. While some excess supply may be made available for export, exports of natural uranium conversion services from China are irregular and in any event are assumed not to exceed 5% of its production.
58. The Parties also submitted that Russian-based suppliers (namely Rosatom and its subsidiaries) are important suppliers of natural uranium conversion services worldwide. While the Parties acknowledged some uncertainty about their role in the future, the Parties submitted that the most likely scenario is that Russian suppliers would continue to act as a competitive constraint in the near, mid- and long-term. On this basis, the Parties submitted that the geographic scope should include Russia.<sup>50</sup>

#### *CMA's assessment*

59. The evidence that the CMA has received supports the Parties' submission that China should be excluded from the geographic scope and indicates that suppliers of conversion services located in China generally only supply customers located in China.<sup>51</sup> In particular, customers responding to the CMA's market investigation did

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<sup>47</sup> For example: Annex 005; Westinghouse internal document WEC00022455.

<sup>48</sup> FMN, paragraph 147.

<sup>49</sup> FMN, paragraphs 155 and 156.

<sup>50</sup> FMN, paragraphs 392-393.

<sup>51</sup> For example: UxC's Conversion Market Outlook of December 2022.

not mention suppliers in China as an alternative, albeit one customer indicated that exports from China may be an alternative in the future.<sup>52</sup>

60. As discussed in the competitive assessment section below, the CMA found that Russia, through Rosatom, is currently a significant source of supply for utility customers globally, including in Europe and North America. On this basis and notwithstanding that there is a significant degree of uncertainty surrounding the future status of supply from Russia in light of Russia's invasion of Ukraine, the CMA considers it is appropriate to include Russia in the geographic frame of reference.<sup>53</sup>
61. More generally, the CMA found that utility customers, including those in Europe, procure natural uranium conversion services on a global basis (excluding China).<sup>54</sup> While the CMA received some evidence that suppliers may be stronger competitors for utility customers located in the same country or region, the CMA did not find evidence of significant differences in the competitive strength of suppliers as between North America and Europe.<sup>55</sup>
62. For the reasons set out above, the CMA has considered the impact of the Merger on a global basis excluding China. In any event, the precise boundaries of the geographic frame of reference do not affect the findings of the CMA's competitive assessment.

## **Supply of non-CANDU fuel assemblies**

### ***Product scope***

#### *Parties' submissions*

63. The Parties submitted that while Cameco and Westinghouse both supply fuel assemblies, Cameco supplies fuel assemblies for CANDU reactors only, whereas

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<sup>52</sup> Customer questionnaire responses [X].

<sup>53</sup> That said, the CMA also found that the supply of nuclear fuel within Russia is not contestable by non-domestic suppliers, meaning that Rosatom, a state-owned entity, supplies the conversion, enrichment, and fuel assembly requirements of all nuclear reactors in Russia. In practice, this means that a proportion of Rosatom's global conversion services sales volumes represent captive sales to Russia and may overstate its competitive strength in the global market. The CMA also found that there are a number of other countries which exclusively procure from Rosatom and may also not be contestable. The CMA has considered this where relevant in its competitive assessment. See: UxC's Conversion Market Outlook of December 2022, page 9; FMN, Table Q4(a).

<sup>54</sup> Call notes with utility customers [X]; Customer questionnaire responses [X], questions 2 and 3.

<sup>55</sup> See, for example: Customer questionnaire responses [X].



Westinghouse supplies fuel assemblies for non-CANDU reactors only, and that they constitute separate product markets.<sup>56</sup>

64. The Parties also submitted that different types of non-CANDU reactors (including AGR, PWR, BWR, and VVER) belong to a single product market.<sup>57</sup> According to the Parties, while there is limited demand-side substitutability between non-CANDU reactor types (as from a customer's perspective, fuel assemblies for each type of reactor can be used only in that respective type of reactor), there is a high degree of supply-side substitutability between fuel assemblies for different types of non-CANDU reactors.

#### *CMA's assessment*

65. In line with the Parties' submissions, evidence received by the CMA consistently shows that there is limited demand and supply-side substitutability between fuel assemblies for CANDU and non-CANDU reactors.<sup>58</sup> On this basis, the CMA considers that the supply of fuel assemblies to CANDU and non-CANDU reactors represent different product frames of reference.
66. The evidence received by the CMA also indicates that there is limited demand-side substitutability between the fuel assemblies for different types of non-CANDU reactors.<sup>59</sup> However, contrary to the Parties' submissions, evidence received by the CMA indicates that, while there is a degree of similarity between the production of fuel assemblies for different types of non-CANDU reactors, switching supply between the production of fuel assemblies for different types of reactors is difficult and requires additional investment, especially if a supplier does not have a licensed design for a particular reactor type.<sup>60</sup> Consistent with this, the conditions of competition appear to vary materially by reactor type.<sup>61</sup>

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<sup>56</sup> FMN, paragraph 203.

<sup>57</sup> FMN, paragraph 185. **BWR** is a boiling water light water reactor and **VVER** is a water-water energetic reactor.

<sup>58</sup> For example: Westinghouse internal document WEC00051400, page 32; Westinghouse internal document WEC00051470, call with [redacted] 21 June 2023.

<sup>59</sup> See, for example: UxC's Fabrication Market Outlook of September 2022.

<sup>60</sup> For example, a few suppliers of fuel assemblies said that, if a supplier does not have a licensed design, then switching their production to a different type of fuel assembly could take more than 10 years and require significant investment (Competitor questionnaire responses [redacted], questions 6 and 7). This is also supported by previous decisions by the European Commission, which have distinguished between fuel assemblies for different reactor types, in particular fuel assemblies for PWR and BWR reactor types (see [COMP/M.4153](#) Toshiba/Westinghouse, Commission decision of 19 September 2006, paragraph 36; and [COMP/M.1940](#), Framatome/Siemens/Cogéma/JV, Commission decision of 6 December 2000, paragraph 23). See also: Annex Q14.1; Competitor questionnaire responses [redacted], questions 6 and 7.

<sup>61</sup> See for example: Annex Q14.1; Annex Q9.2.8, page 19.

67. Based on this, the CMA believes that the supply of fuel assemblies to each non-CANDU reactor type (ie each of PWR, BWR, VVER and AGR) may represent separate product frames of reference. On a cautious basis, in assessing whether the Merger gives rise to conglomerate effects, the CMA has considered Westinghouse's market position in the supply of fuel assemblies for each relevant non-CANDU reactor type. In any event, the precise boundaries of the product frame of reference do not affect the findings of the CMA's competitive assessment.

### ***Geographic scope***

#### *Parties' submissions*

68. The Parties submitted that the geographic frame of reference for the supply of fuel assemblies is at least UK and EEA-wide, as suppliers of fuel assemblies supply customers across this region.<sup>62</sup> The Parties noted, however, that while there are common characteristics of fuel assemblies globally, including between North America and Europe, it is not typical for fuel assemblies to be imported between these two regions.

#### *CMA's assessment*

69. The evidence received by the CMA indicates that it may be appropriate to consider the supply of fuel assemblies in Europe (including the UK), and North America as separate geographic frames of reference for each relevant reactor type.<sup>63</sup> In particular, the CMA notes that the conditions of competition appear to vary between Europe and North America. For example, Westinghouse's share of supply varies significantly between North America and Europe for the supply of fuel assemblies to BWRs and PWRs, ENUSA (which supplies fuel assemblies to PWRs and BWRs) is active only in Europe, and GNF (which only supplies fuel assemblies to BWRs) is not active in Europe but has a material share of supply in North America.<sup>64</sup>
70. On this basis, the CMA considers that different regions of the world, and in particular Europe (including the UK) and North America, are distinct geographic frames of reference in the supply of non-CANDU fuel assemblies for each relevant reactor type.

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<sup>62</sup> FMN, paragraphs 190 and 290.

<sup>63</sup> This is also supported by previous decisions by the European Commission: [COMP/M.4153](#), paragraph 47-50; [COMP/M.1940](#), paragraph 27-33.

<sup>64</sup> Additionally, it is noted that Westinghouse is the sole supplier of fuel assemblies to the AGR reactors, which are only used by the UK. Annex Q14.1 of the FMN.

## Conclusion on frame of reference

71. For the reasons set out above, the CMA has considered the impact of the Merger with reference to the following frames of reference:
- (a) The supply of natural uranium conversion services on a global basis excluding China; and
  - (b) The supply of fuel assemblies for each relevant non-CANDU reactor type in Europe and North America, respectively.

## COMPETITIVE ASSESSMENT

72. In assessing the impact of the Merger on competition, the CMA has focused its assessment on the loss of future competition in the supply of natural uranium conversion services. The CMA has also considered whether the Merger could lead to conglomerate effects based on the bundling or tying of Westinghouse's supply of non-CANDU fuel assemblies with the Parties' natural uranium conversion services.<sup>65</sup>

### Loss of future competition in the supply of natural uranium conversion services

73. Mergers involving a potential entrant can lessen competition as they may imply a loss of the future competition between the merger firms after the potential entrant would have entered or expanded.<sup>66</sup> The CMA assessed whether it is or may be the case that the Merger may be expected to result in an SLC in relation to the loss of future competition in the supply of natural uranium conversion services on a global basis (excluding China).
74. The concern under this theory of harm is that the Merger may remove any future competition between Westinghouse and Cameco. This could happen by eliminating Westinghouse's incentive to re-enter the supply of natural uranium conversion services or by reducing competition following entry.

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<sup>65</sup> Cameco is also active in the supply of CANDU fuel assemblies but not non-CANDU fuel assemblies. As part of its investigation, the CMA considered the likelihood, absent the Merger, of Cameco entering into the supply of non-CANDU fuel assemblies in competition with Westinghouse. The evidence received by the CMA, including the Parties' internal documents, did not support that Cameco's entry would be a realistic prospect, and therefore the CMA has not considered this issue further in this decision.

<sup>66</sup> [CMA129](#), March 2021, paragraph 5.2.

75. To assess this, the CMA has considered the likelihood of Westinghouse entering the supply of natural uranium conversion services absent the Merger, and how that entry would affect competition.

### ***Likelihood of entry by Westinghouse***

76. The CMA may consider a range of evidence regarding the prospect of entry by the merger firms. Entry may be considered more likely where a merger firm has the incentive and ability to enter; has well-developed plans or has already taken significant steps towards entry; where incumbent firms are taking action in anticipation of its entry; or where it has a past history of entry into related markets.<sup>67</sup>

### ***Parties' submissions***

77. The Parties submitted that Westinghouse's considerations of re-entry into natural uranium conversion services are purely speculative and exploratory.<sup>68</sup> The Parties submitted that Westinghouse has not formed any specific plans for these projects, is currently only conducting initial feasibility and design studies, and [redacted]. Accordingly, the Parties submitted that the opening of conversion lines at Westinghouse's Springfields facility is neither timely nor likely and [redacted].<sup>69</sup>

78. The Parties also submitted that none of the conditions for potential entry identified in the CMA's Merger Assessment Guidelines apply, including *inter alia*, that Westinghouse does not have a proven incentive to enter, nor the ability to enter as it does not have the [redacted]; and does not have well developed plans and has not already taken significant steps towards entry.<sup>70</sup>

### ***CMA's assessment***

79. The CMA has assessed the likelihood of Westinghouse's entry into natural uranium conversion services by reference to the following:

- (a) Westinghouse's application for UK government funding;
- (b) Westinghouse's previous activities as a supplier of conversion services;
- (c) the strategic context for Westinghouse's potential entry;

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<sup>67</sup> [CMA129](#), March 2021, paragraph 5.10.

<sup>68</sup> FMN, paragraph 329.

<sup>69</sup> FMN, paragraph 329.

<sup>70</sup> Supplemental submission dated 21 September 2023, paragraphs 2.2-2.5; FMN, paragraph 331.

(d) the potential demand for Westinghouse's conversion services; and

(e) Westinghouse's [REDACTED].

- Application for UK government funding

80. In October 2022, Westinghouse applied to BEIS for matched funding to support feasibility studies exploring the opening of RepU and/or natural uranium conversion lines at its Springfields site. BEIS granted Westinghouse an award of £13 million in December 2022, to be provided [REDACTED].<sup>71</sup>
81. Westinghouse's funding application described its intention to begin natural uranium conversion at its Springfields site in 2028, with a targeted production of [REDACTED] a year.<sup>72</sup> The application includes an initial assessment of the potential engineering options for a natural uranium conversion facility and a detailed proposal of the work that would need to be completed ahead of commissioning the construction of the facility. The application noted that the direct award will facilitate the detailed scoping and planning of the project, ahead of signing contracts with customers in [REDACTED].<sup>73</sup> Westinghouse's internal documents also indicate that the scoping work will allow it to refine its estimates on production costs and the required capital expenditures ahead of [REDACTED].<sup>74</sup>
82. The CMA considers that, while there remains a material degree of uncertainty in respect of the likely cost of Westinghouse's potential entry into natural uranium conversion services, Westinghouse's application for UK government funding constitutes a relatively well-developed plan of entry in the near future.
- Historic supply of natural uranium conversion services at the Springfields site
83. Westinghouse previously supplied natural uranium conversion services at the Springfields site until 2014 when production was halted due to [REDACTED].<sup>75</sup>
84. Consistent with the Parties' submissions, Westinghouse's internal documents show that [REDACTED] investment, engineering and design work would be required to re-instate

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<sup>71</sup> [Westinghouse Receives UK Government Grant to Explore Uranium Conversion Services \(westinghousenuclear.com\)](https://www.westinghousenuclear.com).

<sup>72</sup> Westinghouse [REDACTED] (WEC00017260); Westinghouse internal document WEC00017349.

<sup>73</sup> Westinghouse [REDACTED] (WEC00017260), page 12.

<sup>74</sup> Subject to a completed feasibility study and board approval, Westinghouse would then complete the preliminary design, and following this, the detailed design phase described above. EC RF15 Response, question 14; Westinghouse internal document WEC00023061, page 9.

<sup>75</sup> Westinghouse [REDACTED] (WEC00017260), page 9.

Westinghouse's natural uranium conversion facilities and upgrade them to modern standards.<sup>76</sup>

85. Nevertheless, the CMA considers that Westinghouse's previous activity as a supplier of natural uranium conversion services makes it well-placed to enter, and well informed as to the likely costs and risks of such entry. For example, Westinghouse's application for UK government funding confirmed that [REDACTED].<sup>77</sup>
- Strategic context for entry into natural uranium conversion
86. Westinghouse's internal documents indicate that [REDACTED]. For example, in an internal document [REDACTED].<sup>78</sup>
87. Contrary to the Parties' submissions, re-entry into natural uranium and RepU conversion at Westinghouse's Springfields facility also feature in [REDACTED].<sup>79</sup>
- Demand for Westinghouse's conversion services
88. The CMA believes that there would likely be sufficient demand to support Westinghouse's entry into natural uranium conversion services. In particular, Westinghouse [REDACTED] purchasing natural uranium conversion services from Westinghouse.<sup>80</sup> Reflecting on these [REDACTED], a Westinghouse internal document noted that '[REDACTED]'.<sup>81</sup>
89. Similarly, most utility customers responding to the CMA's market investigation confirmed they would consider purchasing natural uranium conversion services from Westinghouse.<sup>82</sup>
- Initial assessment of profitability of entry

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<sup>76</sup> Namely, Westinghouse is considering [REDACTED] (WEC00017260), pages 28 and 30). In addition, in order to have an end-to-end conversion capability, [REDACTED] (Westinghouse [REDACTED] (WEC00017260), page 80). [REDACTED]. See: Westinghouse internal document WEC00044753.

<sup>77</sup> Westinghouse [REDACTED] (WEC00017260), page 7. See also: Westinghouse internal document WEC00009624.

<sup>78</sup> Annex Q18.1 of the FMN, page 8 and 10.

<sup>79</sup> Annex Q9.1.14 of the FMN, page 11.

<sup>80</sup> [REDACTED] purchase conversion services from Westinghouse, [REDACTED].

<sup>81</sup> Westinghouse internal document WEC00018912. Furthermore, certain internal documents of Westinghouse suggest that Westinghouse [REDACTED]; see, for example: Westinghouse internal document WEC00023061, page 9; Westinghouse internal document WEC00009622; Westinghouse internal document WEC00047885.

<sup>82</sup> Customer questionnaire responses [REDACTED]. Some customers also indicated they would be willing to sign a long-term contract in advance of production to support the opening of the facility (Customer questionnaire responses [REDACTED]).

90. Westinghouse's application for UK government funding estimated that entry into natural uranium conversion services would require an investment in the range of [REDACTED].<sup>83</sup> Other financial modelling in Westinghouse's internal documents show [REDACTED].<sup>84</sup>
91. While the CMA recognises that these estimates are preliminary in nature and may not capture all relevant considerations, the CMA considers that Westinghouse's [REDACTED] indicates that it has a strong [REDACTED] incentive to enter the supply of natural uranium conversion services.

### *Conclusion on likelihood of entry by Westinghouse*

92. Based on the above, the CMA believes that, absent the Merger, there is, at a minimum, a realistic prospect that Westinghouse would have re-entered the supply of natural uranium conversion services in the near future (by around 2028). Westinghouse has relatively well-developed plans to enter the supply of natural uranium conversion services within this time frame and has taken some significant steps towards entry, including obtaining Government funding to support scoping of the project and initial engagement with [REDACTED]. The CMA considers that Westinghouse also has the ability and incentive to enter.

### *Impact of entry by Westinghouse*

#### *Parties' submissions*

93. The Parties submitted that even if Westinghouse decided to enter the market for natural uranium conversion services, the Merger would not give rise to a realistic prospect of an SLC for the following reasons:<sup>85</sup>
- (a) The increment to Cameco's share of supply would be small, and the Parties would face strong competition from a number of alternative conversion sources, in particular Rosatom, Orano and ConverDyn, each with capacity

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<sup>83</sup> The application noted that [REDACTED] (Westinghouse [REDACTED] (Westinghouse internal document WEC00017260, page 49). The CMA considers that [REDACTED] included in Westinghouse's application [REDACTED] (UxC's Conversion Market Outlook of December 2022). In addition, [REDACTED] (Westinghouse internal document WEC00018889, page 17).

<sup>84</sup> Westinghouse internal document WEC00009622; EC RFI5 response, paragraph 36.

<sup>85</sup> FMN, paragraphs 388 and 400-404. In addition, the Parties submitted that the Merger could not impact prices because the market is already subject to excess demand (which incentivises every supplier to produce and sell at its maximum capacity, with no incentive to undercut rivals), and that [REDACTED] (FMN, paragraphs 400 and 406-409; supplemental submission dated 21 September 2023; and Parties' economic submission dated 21 September 2023). The CMA has not placed weight on this submission as it has found that the Merger does not raise competition concerns in any event, for the reasons set out in the competitive assessment below.

greater than Westinghouse, as well as secondary sources of supply such as underfeeding;

- (c) While there is uncertainty about the future role of Rosatom, the most likely scenario is that Rosatom would continue to act as a competitive constraint; and
- (d) Cameco has not identified any internal documents which discuss the impact of Westinghouse's potential entry on Cameco's business. Further, the entry of Westinghouse is not predicted to lead to a reduction in prices (according to third-party reports) and therefore is not expected to impact Cameco's profits.

#### *CMA's assessment*

94. The impact of a potential entrant on competition is likely to be more significant where the other merger firm would already have market power absent the merger, with greater market power being associated with a greater likelihood of an entrant having a bigger impact on competition.<sup>86</sup> To assess the impact of Westinghouse's entry, the CMA has therefore considered shares of supply; the strength of alternative competitive constraints, including out of market constraints; and evidence from third parties.
- Shares of supply
95. No single measure of shares fully captures the relative competitive strength of suppliers. In this case, the CMA considers that shares by capacity broadly reflect the relative competitive strength of primary suppliers, but do not capture the additional competitive constraint from secondary sources of supply, in particular UF<sub>6</sub> resulting from underfeeding by Urenco and Orano. Shares by sales volume do capture the constraint from secondary sources of supply, but may reflect unrepresentative short-term movements in the annual sales of primary suppliers caused by, for example, lumpy and inconsistent demand from long-term contracts.<sup>87</sup>
96. Table 1 below presents shares of supply estimates for natural uranium conversion services by capacity and sales volume in 2022. This shows that Cameco is currently one of four significant primary suppliers of natural uranium conversion services, with a share by capacity of 27% and share by sales volume of [10-20]%. The largest supplier is Orano, on both a capacity and sales volume basis. Rosatom operates at

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<sup>86</sup> [CMA129](#), paragraph 5.15.

<sup>87</sup> The CMA notes that the difference between Cameco's capacity share and its share by sales volume is larger than that of Orano's and ConverDyn's. However, the CMA has not placed weight on this fact as it has not seen any evidence indicating that Cameco is a weaker competitor.



a similar capacity to Cameco, and ConverDyn is the smallest of the primary suppliers.<sup>88</sup> In addition, secondary supply volumes are also sold by Urenco.

**Table 1: Shares of supply in natural uranium conversion services in 2022 globally (excluding China)**

Supplier	Capacity (mkgU as UF <sub>6</sub> )	Shares by capacity (%)	Shares by sales volume (%)
Cameco	12.5	27	[10-20]
Orano	15	32	[30-40]
ConverDyn	7	15	[10-20]
Rosatom	12.5	27	[20-30]
Urenco	-	-	[5-10]

Source: UxC conversion services market report of December 2022 for the capacity shares and CMA analysis of the Parties' submissions and third-party responses [REDACTED] for the sales volume shares.

Notes: ConverDyn's conversion facility has been closed since 2017, however, given the temporary nature of this closure (it reopened in July 2023) it is included in the shares by capacity above. As Urenco only acquires UF<sub>6</sub> through underfeeding in the enrichment process and does not operate primary production capacities, it is not included in the capacity shares above. Sales volumes include the sales of natural uranium conversion services and direct sales of UF<sub>6</sub>. Sales volumes for Rosatom are based on the Parties' best estimates and include the Parties' estimates for the sale of UF<sub>6</sub> from secondary sources, including underfeeding, which are assumed to be sold by Rosatom. mkgU means million kilograms of uranium as UF<sub>6</sub>.

97. In assessing the impact of Westinghouse's potential entry into natural uranium conversion, the CMA has considered how competitive conditions may change following Westinghouse's potential entry. In doing so, the CMA has assessed share of supply projections by capacity in 2028, which corresponds to the earliest date that Westinghouse's conversion facility is expected to be operational. These shares are presented in Table 2 below, and reflect the following:

- (a) Westinghouse's potential entry is included at a capacity of [REDACTED].<sup>89</sup> Westinghouse would therefore be the smallest primary supplier, [REDACTED].
- (b) [REDACTED]. Orano and ConverDyn [REDACTED]. Evidence submitted by the Parties indicates that Cameco [REDACTED].<sup>90</sup>
- (c) The Parties submitted that Rosatom's capacity is expected to gradually increase from 12.5 mkgU in 2022 to 18 mkgU from 2028 onwards, which is

<sup>88</sup> The competitive position of Rosatom is likely overstated in Table 1. See paragraph 60 above and paragraphs 106 to 110 below.

<sup>89</sup> The Parties submitted that this is the maximum possible capacity of Westinghouse's potential facility and is also the capacity of [REDACTED] (FMN, paragraph 488 and footnote 194). This figure is also consistent with Westinghouse's internal documents (see, for example: Westinghouse internal document WEC00023061, page 1).

<sup>90</sup> FMN, paragraph 489.

also consistent with third-party market reports.<sup>91</sup> However, the CMA considers that any potential increase in Rosatom’s capacity is uncertain, and would likely overstate its competitive strength given the impact of Russia’s invasion of Ukraine (as discussed further at paragraphs 106 to 110 below). Therefore, on a cautious basis, Table 2 does not include potential increases in Rosatom’s natural uranium conversion capacity.

- (d) For the reasons noted above, the shares by capacity in Table 2 do not capture the potential constraint from secondary sources of supply, in particular the sale of UF<sub>6</sub> resulting from underfeeding in the enrichment process.

**Table 2: Shares of supply projections for natural uranium conversion services in 2028 by capacity globally (excluding China)**

Supplier	Shares by capacity (%)
Cameco	[20-30]
Westinghouse	[10-20]
<b>Combined</b>	<b>[30-40]</b>
Orano	[20-30]
ConverDyn	[10-20]
Rosatom	[20-30]

Source: CMA analysis of third-party responses [redacted] and Parties’ submissions.

98. Table 2 shows that following its re-entry, Westinghouse is expected to have a material share by capacity at [10-20]% in 2028, but would be the smallest primary supplier of natural uranium conversion services. Post-Merger, the Parties combined would be the largest primary supplier, although each of Orano, ConveryDyn and Rosatom are expected to have significant shares. The CMA considers the future competitive strength of these three suppliers, as well as the constraint by secondary sources of supply, in further detail below.

- Competitive constraints from alternative suppliers
  - Orano

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<sup>91</sup> FMN, paragraph 489. UxC Conversion Market Outlook of December 2022.

99. Orano supplies natural uranium conversion services from its Comurhex II conversion complex in southwest France and is currently the only supplier located in Europe.<sup>92</sup> In addition, Orano is a significant supplier of uranium enrichment.<sup>93</sup>
100. In 2022, Orano was the largest global supplier of natural uranium conversion services by capacity and sales volume (see Table 1). Orano's sales volume includes its sales of UF<sub>6</sub> resulting from underfeeding in the enrichment process, [REDACTED].<sup>94</sup> In this respect, Orano not only operates the largest conversion capacity globally, but is also able to slightly increase its effective capacity through underfeeding its enrichment facilities. Further, customers responding to the CMA's investigation indicated that Orano is a direct alternative to Cameco.<sup>95</sup>
101. The CMA therefore believes that Orano competes closely with Cameco and will impose a strong constraint on Cameco going forward.
- ConverDyn
102. ConverDyn currently operates a conversion facility in Metropolis, USA, which re-opened in July 2023.<sup>96</sup> This facility previously had a capacity of 15 mkgU, however in 2014 its capacity was reduced to 7 mkgU, and in 2017 the plant was temporarily closed due to unfavourable market conditions following the Fukushima nuclear accident.<sup>97</sup> While its plant was closed, ConverDyn continued to supply conversion services through ongoing purchases of conversion from various sources, including a [REDACTED].<sup>98</sup>
103. UxC's conversion services market report of December 2022 indicates that ConverDyn is exploring an expansion in its capacity from 7mkgU to 10 mkgU by 2028.<sup>99</sup> [REDACTED].<sup>100</sup>
104. Customers responding to the CMA's investigation indicated that ConverDyn is a direct alternative to Cameco.<sup>101</sup> In addition, [REDACTED].<sup>102</sup>

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<sup>92</sup> Competitor questionnaire response [REDACTED], question 3.

<sup>93</sup> UxC's Enrichment Market Outlook of Q1 2023.

<sup>94</sup> Competitor questionnaire response [REDACTED], question 2.

<sup>95</sup> Customer questionnaire responses [REDACTED], question 2.

<sup>96</sup> Competitor questionnaire response [REDACTED].

<sup>97</sup> UxC conversion services market report of December 2022; Annex 001(c).

<sup>98</sup> UxC conversion services market report of December 2022.

<sup>99</sup> UxC's Conversion Market Outlook of December 2022, page 46.

<sup>100</sup> Competitor questionnaire response [REDACTED], question 3.

<sup>101</sup> Customer questionnaire responses [REDACTED], question 2.

<sup>102</sup> Note of call with competitor [REDACTED], paragraph 5.

105. Therefore, the CMA believes that ConverDyn will impose a strong constraint on Cameco going forward, and an even stronger constraint in the event that it expands its capacity.
- Rosatom
106. Evidence submitted by the Parties indicates that approximately half of Rosatom's sales of natural uranium conversion services were through the sale of fuel assemblies to countries, including Russia, which may not be contestable by other suppliers, meaning that its shares of supply above (see Table 1) likely overstate its competitive strength in the wider market.<sup>103</sup> Nevertheless, outside of these countries, Rosatom is currently a significant source of supply for utility customers, including in Europe and North America. In particular, the Parties estimate that Rosatom exported the equivalent of approximately 6 mkgU of natural uranium conversion services in 2022 (amounting to approximately half of its current total capacity) through its exports of enriched uranium to the global market.<sup>104</sup> Additionally, evidence submitted by customers and competitors indicates that these exports have historically been a direct alternative to the procurement of natural uranium conversion services.<sup>105</sup>
107. That said, the evidence indicates that the competitive strength of Rosatom has been adversely affected by Russia's invasion of Ukraine in February 2022, with some countries and utility customers in Europe and North America seeking to diversify away from sources of conversion, enrichment, and fuel fabrication originating in Russia.<sup>106</sup> Further, many customers responding to the CMA's market investigation said that they were not likely to include Rosatom in future procurement exercises or sign new supply contracts with Rosatom for natural uranium conversion or enriched uranium.<sup>107</sup> The potential weakening of Rosatom as a competitive constraint is consistently recognised in Westinghouse's internal documents [§<].<sup>108</sup>

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<sup>103</sup> FMN, Table Q4(a). See also: UxC's Conversion Market Outlook of December 2022, page 9.

<sup>104</sup> FMN, Table Q5(c).

<sup>105</sup> Third-party questionnaire response [§<], question 9. See also: UxC's Conversion Market Outlook of December 2022, page 48; Customer questionnaire response [§<], question 9; Email from [§<] to the CMA dated 22 September 2023, 11:25.

<sup>106</sup> UxC's Conversion Market Outlook of December 2022, page 12.

<sup>107</sup> Customer questionnaire responses [§<], question 4; Email from [§<] to the CMA dated 22 September 2023, 11:25. In particular, one utility customer noted that Russia's invasion of Ukraine has elevated their requirements for security of supply and that they view Russian-sourced material as less reliable. Customer questionnaire response [§<], question 4.

<sup>108</sup> In particular, a Westinghouse internal document acknowledges the possibility of sanctions on Rosatom's natural uranium conversion business and notes that, [§<]. Westinghouse internal document WEC00018912. See also: Westinghouse internal document WEC00023061.

108. The CMA notes that, to date, no sanctions restricting Rosatom's ability to supply conversion and enrichment services have been imposed by the UK or the EU.<sup>109</sup> Further, evidence from customers indicates that, while there may be a sustained reduction in procurement from Rosatom, this may be gradual, with utility customers continuing to honour their current contracts with Rosatom.<sup>110</sup> In addition, evidence from competitors indicates that there is significant uncertainty concerning the potential re-integration of supply originating in Russia over time.<sup>111</sup> Consistent with this, UxC's conversion services market report of December 2022 forecasts that Rosatom will continue to export a material but declining volume of conversion services and notes that customers expect a 'gradual but permanent reduction' in procurement from Rosatom, but that a significant number of customers also expect a degree of reintegration in the future.<sup>112</sup>
109. In addition, and in spite of this uncertainty, the CMA found evidence in Westinghouse's internal documents indicating that Rosatom is currently imposing a constraint on Westinghouse [§].<sup>113</sup> This suggests that Rosatom may continue to exercise a similar constraint on Westinghouse (and Cameco) in relation to the supply of natural uranium conversion services.
110. Taking the available evidence in the round, the CMA therefore believes that Rosatom will likely impose a moderate constraint on Cameco in the future.
- Urenco
111. Urenco is a significant supplier of enrichment services, operating several facilities across North America and Europe (including in the UK).<sup>114</sup> Urenco obtains UF<sub>6</sub> through underfeeding the enrichment process and in 2022 had a share of supply in natural uranium conversion services of [5-10]% by sales volume (Table 1).

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<sup>109</sup> FMN, paragraph 392. The Parties provided evidence regarding the likelihood of sanctions being introduced in the future (FMN, paragraph 392), see also note of call with customer [§] and note of call with third party [§].

<sup>110</sup> Namely, three utility customers indicated that Russia's invasion of Ukraine had impacted their demand for conversion services originating in Russia, but that they would continue to honour their existing contracts with TENEX. Customer questionnaire response [§], question 4; Customer questionnaire response [§], question 11; Email from [§] to the CMA dated 22 September 2023, 11:25.

<sup>111</sup> Competitor questionnaire response [§], question 9. Competitor questionnaire response [§], question 9.

<sup>112</sup> UxC's Conversion Market Outlook of December 2022, page 14.

<sup>113</sup> In particular, an internal document notes that, [§]. Annex 005 of the FMN, page 12.

<sup>114</sup> UxC's Enrichment Market Outlook of Q1 2023.

112. Evidence submitted by the Parties and customers indicates that Urenco directly competes with Cameco and other primary suppliers for long-term natural uranium conversion contracts.<sup>115</sup> In particular, [redacted].<sup>116</sup>
113. However, the CMA understands that these volumes represent a historic high and are the result of Urenco dedicating a sizeable portion of its enrichment capacity to underfeeding after the Fukushima nuclear accident.<sup>117</sup> Further, evidence from customers and competitors indicates that the role of Urenco as a supplier of natural uranium conversion services is likely to significantly diminish following Russia's invasion of Ukraine. Many customers and competitors told the CMA that enrichers, including Urenco, have switched to overfeeding in response to increased demand caused by customers switching from Rosatom's enrichment services.<sup>118</sup> In particular, [redacted].<sup>119</sup>
114. Based on the above, the CMA considers that Urenco would provide an additional constraint on Cameco if the market returned to underfeeding in the future, although, such an outcome would depend on the relative price of UF<sub>6</sub> to enrichment. The CMA believes that in such a circumstance, Urenco would impose a moderate to weak constraint on Cameco.
- Views of third parties on the strength of Westinghouse and the impact of the Merger
115. In considering the impact of Westinghouse's entry on competition in the supply of natural uranium conversion services, the CMA has placed weight on the views of third parties, in particular utility customers.
116. While the views of utility customers were mixed, overall, they indicate that Westinghouse's entry would likely not have a significant impact on competition:
- (a) EDF, which currently operates all operational and planned nuclear reactors in the UK, was supportive of the Transaction and did not express concerns

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<sup>115</sup> Customer questionnaire responses [redacted]; Competitor questionnaire responses [redacted]; Note of call with customer [redacted]; FMN, paragraphs 269 and 270.

<sup>116</sup> Competitor questionnaire response [redacted], question 1 and 5.

<sup>117</sup> UxC's Conversion Market Outlook of December 2022, page 61.

<sup>118</sup> Customer questionnaire responses [redacted]; Competitor questionnaire responses [redacted]; Note of call with customer [redacted].

<sup>119</sup> Email from [redacted] to the CMA dated 22 August 2023, 16:01. See also UxC's Conversion Market Outlook of December 2022, page 61.

regarding the impact of the Merger on competition, including in natural uranium conversion services.<sup>120</sup> In addition, [redacted].<sup>121</sup>

- (b) Another large utility customer said that the entry of Westinghouse would not have a significant impact on competition.<sup>122</sup>
- (c) Two utility customers said that the Merger may have some impact on competition, although one of these noted that it would not have a significant impact given the scale of Westinghouse's entry.<sup>123</sup> Two other utility customers said that an independent Westinghouse could help them negotiate lower prices.<sup>124</sup> However, no utility customer that responded to the CMA's market investigation expressed concerns in relation to the effect of the Merger on competition.

117. As for natural uranium conversion service suppliers, while one supplier told the CMA that Cameco may decide not to open the Springfields site to keep the price of natural uranium conversion services high,<sup>125</sup> two other suppliers did not have concerns in relation to a loss of future competition between Cameco and Westinghouse in natural uranium conversion services.<sup>126</sup>

### **Conclusion on loss of future competition**

118. For the reasons outlined above, the CMA considers that there is, at a minimum, a realistic prospect that Westinghouse re-enters the supply of natural uranium conversion services in the near future. Although there is significant uncertainty regarding future market conditions, the CMA considers that Westinghouse would be a material primary supplier, but the alternative constraints faced by Cameo are likely to be collectively sufficient to discipline the commercial behaviour of Cameco post-Transaction.
119. Therefore, the CMA does not believe that the Merger raises competition concerns as a result of horizontal unilateral effects through the loss of future competition in the supply of natural uranium conversion services on a global basis (excluding China).

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<sup>120</sup> Note of call with EDF.

<sup>121</sup> Note of call with EDF.

<sup>122</sup> Customer questionnaire response [redacted], question 6.

<sup>123</sup> Customer questionnaire responses [redacted], question 6.

<sup>124</sup> Customer questionnaire responses [redacted], question 6.

<sup>125</sup> Notes of call with customer [redacted].

<sup>126</sup> Notes of calls with customers [redacted].

## **Conglomerate effects**

120. Conglomerate effects may arise in mergers of firms that are active in the supply of goods or services that do not form part of the same markets, but which are nevertheless related in some way. These mergers raise the possibility that competition in one market may be indirectly affected by actions in the other.<sup>127</sup> The concern in these mergers is that the merged firm may foreclose its rivals by preventing them from accessing customers in one market using its strong position in another related market, which could lead to higher prices for customers in the longer term if rivals become less effective competitors.<sup>128</sup>
121. The CMA has considered whether Westinghouse's position in the supply of non-CANDU fuel assemblies may allow the Parties to foreclose rival providers of natural uranium conversion services through a bundling or tying strategy. This concern was raised by one competitor.<sup>129</sup>
122. Evidence received by the CMA consistently shows that Westinghouse holds a strong position in the supply of non-CANDU fuel assemblies in both Europe and North America, and particularly in the US where Westinghouse benefits from having designed a material proportion of PWR reactors.<sup>130</sup> The CMA also notes that Westinghouse is the sole supplier of fuel assemblies to the UK's AGR reactors.<sup>131</sup>
123. However, the evidence indicates that Westinghouse would lack the ability to foreclose competing suppliers of natural uranium conversion services. In particular:
- (a) Feedback from utility customers generally indicated a preference to purchase natural uranium conversion and fuel assemblies separately, and, due to security of supply concerns, a strong preference to purchase conversion services from multiple suppliers.<sup>132</sup> For example, three customers told the CMA that a tied offering would be unacceptable, one customer noted that in response to a tied offer it would switch supplier of fuel assemblies, while another customer noted that any tied offer would have to compensate for the increased risk.<sup>133</sup>

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<sup>127</sup> [CMA129](#), March 2021, paragraph 7.1(b).

<sup>128</sup> [CMA129](#), March 2021, paragraphs 7.30-7.31.

<sup>129</sup> Note of call with third party [redacted].

<sup>130</sup> See for example: Annex Q9.1.4 to the FMN, slide 4 See for example: Annex Q9.1.14 to the FMN, slide 29.

<sup>131</sup> FMN, paragraph 20.

<sup>132</sup> Competitor questionnaire response [redacted], question 8.

<sup>133</sup> Customer questionnaire responses [redacted]



- (b) The CMA found that competing suppliers would still be able to compete to supply a significant proportion of natural uranium conversion volumes on an unbundled basis, such that they would not become materially weaker competitors.<sup>134</sup>
- (c) No utility customers expressed concerns in relation to Westinghouse implementing a foreclosure strategy.

124. As the CMA found that Westinghouse would lack the ability to foreclose competing suppliers of natural uranium conversion services, the CMA did not find it necessary to conclude on whether Westinghouse would have the incentive to do so. Nevertheless, for completeness, the CMA notes that it did not find any strong evidence in the Parties' internal documents of a pre- or post-Merger business strategy to tie or bundle goods and services.<sup>135</sup> Further, the CMA notes that the supply of fuel assemblies is [§<] than the supply of conversion services, which reduces the likelihood that any gain in sales from foreclosing rival natural uranium conversion services suppliers would outweigh the potential loss of sales in fuel assemblies as a result of the foreclosure strategy.<sup>136</sup>

125. Accordingly, the CMA does not believe that the Merger raises competition concerns as a result of conglomerate effects in the supply of natural uranium conversion services on a global basis (excluding China).

## **BARRIERS TO ENTRY AND EXPANSION**

126. Entry, or expansion of existing firms, can mitigate the initial effect of a merger on competition, and in some cases may mean that there is no SLC. In assessing whether entry or expansion might prevent an SLC, the CMA considers whether such entry or expansion would be timely, likely and sufficient.<sup>137</sup>

127. However, the CMA has not had to conclude on barriers to entry or expansion as the Merger does not give rise to competition concerns on any basis.

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<sup>134</sup> This is partly for the reasons set out in paragraph 123 (a). Further, the CMA notes that the supply of natural uranium conversion services is likely to be capacity constrained going forward, with growing demand and high prices. Therefore, competing suppliers are less likely to be foreclosed in response to a loss of sales, while switching from other suppliers to Cameco (or Westinghouse upon its potential entry) in response to a foreclosure strategy may be limited by [§<].

<sup>135</sup> [CMA129](#), March 2021, paragraphs 7.27.

<sup>136</sup> [FMN](#), paragraph 480.

<sup>137</sup> [CMA129](#), March 2022, from paragraph 8.40.

## **THIRD PARTY VIEWS**

128. The CMA contacted relevant third parties, including customers and competitors of the Parties, as part of the investigation. Their views have been taken into account where appropriate in the competitive assessment above.

## DECISION

129. Consequently, the CMA does not believe that it is or may be the case that the Merger may be expected to result in an SLC within a market or markets in the United Kingdom.

130. The Merger will therefore **not be referred** under section 33(1) of the Act.

**Alex Moore**  
**Director, Mergers**  
**Competition and Markets Authority**  
**3 November 2023**

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<sup>i</sup> The SHA Amendment was terminated as of no later than November 21, 2023.