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# From Bonn with love: West German interests in the 1975 nuclear agreement with Brazil

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## ABSTRACT

The 1975 nuclear cooperation agreement between Brazil and West Germany had a considerable impact on the mid-Cold War nuclear non-proliferation regime. This article analyses Bonn's interests in that agreement, as well as the negotiation process leading to it and third-party pressures on both countries. It also covers the follow-up negotiations with Urenco partners for a safeguards agreement. Based on extensive archival research and secondary literature, the author delineates three main West German interests in concluding the 'Brazilian Atomic-Deal': (1) strengthening the ruling socio-liberal coalition; (2) boosting the West German nuclear industry; and (3) making viable the jet-nozzle technology.

## KEYWORDS

1975 nuclear agreement between Brazil and West Germany; Helmut Schmidt; German foreign policy; nuclear cooperation; nuclear non-proliferation; nuclear cooperation; Brazilian foreign policy; jet-nozzle

## Introduction

On 27 June 1975, the Federal Republic of Germany (FRG, or West Germany) and Brazil signed what was called the 'deal of the century'.<sup>1</sup> It was a controversial cooperation agreement to build eight nuclear power plants over 15 years with an experimental technology, the jet-nozzle. It also foresaw the transfer of the full uranium cycle technology to Brazil, the training of personnel, and the construction of enrichment facilities. This was the 'largest single export in German history', amounting to around DM 12 billion (about EUR 6 billion) in the long run.<sup>2</sup> The transfer of technology raised concerns over both Brazil and West Germany's 'real' intentions. Most Western specialists regarded Brasilia as an unreliable partner, which 'has never soft-pedalled its claim of great power status'.<sup>3</sup> The *New York Times*, for example, called it a 'nuclear madness'.<sup>4</sup>

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<sup>1</sup>John R. Redick, *Nuclear Illusions: Argentina and Brazil* (Washington, DC: Henry L. Stimson Centre, 1995), 7; Dennis Romberg, "How to Further Develop the Non-Proliferation Regime? West German Nuclear Exports to Brazil and Iran in Context of US Criticism," *The International History Review* 40, no. 5 (2018): 1094–114; Barbara Heep, *Helmut Schmidt und Amerika* (Bonn: Bouvier, 1990), 73.

<sup>2</sup>Romberg, *How to Further Develop the Non-Proliferation Regime?* 3; William Gray, "Commercial Liberties and Nuclear Anxieties: The US-German Feud over Brazil, 1975–7," *The International History Review* 34, no. 3 (2012): 449–74 (450).

<sup>3</sup>Josef Joffe, "A Dim View of West German-Brazil A-Deal," *The Herald Tribune*, 2 March 1977. See also Norman Gall, "Atoms for Brazil, Dangers for All," *Foreign Policy*, no. 23 (1976): 155–201; "Kanzler Schrieb an Präsident Carter. Thema: Kernenergievertrag Mit Brasilien," *Frankfurter Rundschau*, 10 March 1977, B136 11375, Bundesarchiv, Koblenz, Germany (BArch).

<sup>4</sup>Heep, *Helmut Schmidt und Amerika*, 72.

The Nuclear Agreement between West Germany and Brazil is a well-studied topic in Brazilian nuclear policy.<sup>5</sup> In comparison, little research has been conducted on understanding this agreement from the West German perspective. The A-Deal is overlooked by most studies on Helmut Schmidt's foreign policy, which tend to focus on the US-West German quarrel over the neutron bomb, the 1979 NATO (North Atlantic Treaty Organization) dual-track decision, and the growing anti-nuclear sentiments among the West German population.<sup>6</sup> Within German literature, most references to the Brazilian Deal situate it within US-West German relations and focus on Carter's pressure on Bonn to dismiss the agreement.

William Gray, Fabian Hilfrich, and Dennis Romberg conducted three extensive studies on the US-West German quarrel over that agreement.<sup>7</sup> These studies shed light on the Carter administration's efforts to dismiss the Brazilian Deal, as well as on the different approaches to non-proliferation among Bonn and its closest allies – including France and Canada. Gray also depicts the internal divergence of opinion between economy-related bureaucracies, mainly the Ministry of Economy and Energy (BMWi) and the Ministry of Research and Technology (BMFT), both of which supported a more substantial transfer of technology to Brazil, and the Foreign Office (Auswärtiges Amt, AA), which favoured more restrictions due to proliferation concerns.<sup>8</sup>

This article builds on those previous studies to further the understanding of the West German position on the 1975 nuclear agreement between itself and Brazil. Using material from Brazilian and German archives, as well as online sources from Dutch and American sources, it portrays the interplay of commercial and domestic-political interests that drove West German policy forwards in the face of international pressure. Unlike previous studies, I argue that West German interests in the Brazilian deal were mostly domestically driven. I delineate three main interests in concluding the Brazilian A-Deal: (1) strengthening the ruling socio-liberal coalition after Willy Brandt's resignation; (2) increasing the West German share of the global nuclear market; and (3) making viable the jet-nozzle process for enriching uranium.

This article is divided into three parts. First, I address the background to West German nuclear and foreign policy under the Schmidt administration and the foundations of the Social Democrats' atomic policy. I also highlight the main goals sought via international

<sup>5</sup>Several studies were conducted on the 1975 agreement from the Brazilian perspective. James Cameron, "Technology, Politics, and Development: Domestic Criticism of the 1975 Brazilian-West German Nuclear Agreement," *Revista Brasileira de Política Internacional* 61, no. 2 (2018): 1–17, analyses the parliamentary reaction to the agreement. Matias Spektor, "The Evolution of Brazil's Nuclear Intentions," *Non-Proliferation Review* 23, nos 5–6 (2016): 635–52; Leonardo Bandarra, "A Luta contra o Tordesilhas Nuclear: três momentos da política brasileira (1969–1998)," Master's Thesis, University of Brasília, 2016; and Togzhan Kassenova, *Brazil's Nuclear Kaleidoscope: An Evolving Identity* (Washington, DC: Carnegie Endowment for International Peace, 2014) place the agreement in the general context of Brazilian nuclear and foreign policies. The decision-making process was traced by Fernanda Fernandes, "No núcleo do átomo: os usos da energia nuclear e a inserção internacional do Brasil (1946–1985)," PhD Dissertation, University of Brasília, 2015; Alexandra Almeida, "O Programa Nuclear Brasileiro e o Acordo com a Alemanha: da ambição compartilhada aos interesses fragmentados (1975–1978)," PhD Dissertation, University of São Paulo, 2015. The origins of the Agreement and the relationship to global affairs are topics of the following studies: Carlo Patti, "La Scelta Nucleare Come Reazione Brasiliana Allo Shock Petrolifero Del 1973," *Il Politico: Rivista Italiana Di Scienze Politiche*, no. LXXVIII (2013): 170–93.

<sup>6</sup>The 1975 Brazil-West Germany nuclear agreement is usually referred to in German primary documents as the 'Brazilian Agreement' or the 'A-Deal' (short for Atomic Deal). I use both references interchangeably in this article.

<sup>7</sup>Romberg, *How to Further Develop the Non-Proliferation Regime?*; Gray, *Commercial Liberties and Nuclear Anxieties*; Fabian Hilfrich, "Roots of Animosity: Bonn's Reaction to US Pressures in Nuclear Proliferation," *The International History Review* 36, no. 2 (2014): 277–301. Another noteworthy contribution is Heep, *Helmut Schmidt und Amerika*, chapter 4.

<sup>8</sup>An alternative analysis of the West German domestic divergences on the Brazilian Deal can be found in Stephan Geier, *Schwelldmacht. Bonns heimliche Atomdiplomatie von Adenauer bis Schmidt*. 1., Aufl. (Paderborn: Schöningh, 2013).

cooperation in the nuclear field and the guidelines for Schmidt's version of the *Ostpolitik* ('East Policy'). Second, I address cooperation with Brazil and how the partnership developed over time. Here, I tackle the evolution of nuclear relations with Brazil and West German underlying interests in this partnership. Third, I analyse the negotiation process leading to the A-Deal. I also address the early repercussions and consequences of the deal, particularly the follow-up negotiations to supply Brazil with enriched uranium by Urenco – a tri-national consortium between West Germany, the Netherlands, and the United Kingdom – until the jet-nozzle reactors were functional.

## West German nuclear policy under Helmut Schmidt

### *The origins of the Social Democrats' nuclear policy*

Nuclear technology was held in high esteem by the West German Social Democrats, even while in opposition. In 1955, party leader Erich Ollenhauer declared Chancellor Konrad Adenauer's rearmament policy 'suicidal', but expressed support for the acquisition of full, peaceful nuclear energy.<sup>9</sup> For the Social Democratic Party of Germany (SPD), atomic energy should be a tool to ensure greater social cohesion and inclusiveness. That perspective was maintained when they first entered government as a minor partner in the first grand coalition with the Christian Democratic Union (CDU/CSU) under Chancellor Kurt Kiesinger.

Kiesinger and his foreign minister, as well as successor as chancellor, Willy Brandt, turned West Germany into an active promoter of nuclear non-proliferation. Instead of keeping the door open to enable a nuclear deterrent, they discussed the adherence to the Non-Proliferation Treaty (NPT) as a means to 'boost' the West German atomic industry 'through international partnerships'.<sup>10</sup> Even if not fully known to Brandt, West German participation in the NPT was critical for its success. This treaty was partially conceived by a US-Soviet consensus on the need to dissuade the FRG from going nuclear. The Soviets feared that a nuclear-weapons FRG could 'imperil Moscow's control of Eastern Europe', whereas Washington foresaw an upset to the 'balance of power in Europe' and a menace to the foundations of NATO, should Bonn go nuclear.<sup>11</sup> Bonn was, therefore, at the core of the non-proliferation debate in the late 1960s–early 1970s. It was, however, more interested in ensuring its share of the nuclear market.

The FRG's official position was to defend both a degree of autonomy granted by the European Atomic Energy Community (Euratom) inspections, where West Germany held 'strong influence', and to push for full inspections by the International Atomic Energy Agency (IAEA) in 'all energy-related facilities' in both nuclear-weapon and non-nuclear-weapon states.<sup>12</sup> Also relevant was to keep as much room as possible for the development of

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<sup>9</sup>Bundesministerium Des Innern (BI), Telegram an: BI von: Volksbund für Frieden und Freiheit e.V. Betr.: Aktionen Gegen Die Atombewaffnung Der Bundeswehr, 15 April 1958, B106 16053, BArch. See also Zenek Cervenka and Barbara Rogers, *The Nuclear Axis: Secret Collaboration between West Germany and South Africa* (New York: Times Books, 1978), 40.

<sup>10</sup>Deutsches Atomforum, 1969, Erklärung Des Deutschen Atomforums Zum Atomwaffensperrvertrag Anlässlich der Reaktortagung 1969, 15–18 April in Frankfurt (Main). N102 103462 Hefter 7, BArch.

<sup>11</sup>Hal Brands, "Non-Proliferation and the Dynamics of the Middle Cold War: The Superpowers, the MLF, and the NPT," *Cold War History* 7, no. 3 (2007): 389–423 (392). See also Andreas Lutsch, "Problem Solved? The German Nuclear Question and West Germany's Accession to the NPT (1967–1975)," in *Joining the Non-Proliferation Treaty: Deterrence, Non-Proliferation and the American Alliance*, edited by J. Baylis and Y. Iwama, 93–110 (London: Routledge, 2018).

<sup>12</sup>BMWi, Verzeichnis Der Anliegenden Unterlagen Zum Atomwaffensperrvertrag, 10 November 1969, B102/103463 Hefter 7, 3, BArch.

the West German nuclear industry, including ‘multiple-use technology and plutonium’.<sup>13</sup> This particular point would be at the core of the quarrel between Carter and Schmidt over the Brazilian Deal.

As foreign minister, Brandt sponsored a contentious foreign policy aiming at achieving freedom of action from the Western Bloc and *détente* with the Communist Bloc.<sup>14</sup> This approach entailed a rapprochement with non-nuclear-weapon-states as a means to ensure the independence and competitiveness of the West German nuclear industry. Freedom of manoeuvre would also come from defence-related atomic research. According to the government’s interpretation, this research was allowed by the West German Law on the Peaceful Uses of Nuclear Energy and the NPT, both of which did not ‘prohibit research for military use in general, as long as no nuclear warheads are built’.<sup>15</sup>

During the 1967 negotiations over the NPT, Foreign Minister Brandt attempted to take a leading position amid non-nuclear-weapon nations. The FRG joined with Brazil, India, and Japan in criticising the discriminatory nature of the treaty and in advocating for further concessions from nuclear-weapon states (NWS). Those demands ‘earned [West] Germany the reputation of being a “gang-leader” in the eyes of the Americans’, even though Bonn’s leadership was contested within this group.<sup>16</sup> Regional and domestic reasons were used to justify the non-signature of the NPT, such as the Soviet invasion of Czechoslovakia in 1968 and the opposition of CSU leader Franz Josef Strauss – to the point of threatening to break up the CDU/CSU alliance in case of signature.<sup>17</sup>

### **The social-liberal nuclear policy (1969–82)**

As chancellor, Brandt reframed Kiesinger’s nuclear policy guidelines under the auspices of the new *Ostpolitik* – implemented together with his foreign minister, and future federal president, Walter Schell. *Ostpolitik* aimed at ‘change through rapprochement’ (*Wandel durch Annäherung*).<sup>18</sup> This would mean creating ‘conditions for approximation’ with communist countries, mainly the German Democratic Republic (DDR) and the Soviet Union.<sup>19</sup> In 1969, despite the effects of the invasion of Czechoslovakia and the stiff opposition – led by the CDU/CSU – witnessed in the Bundestag, Brandt signed the NPT. It was ratified in 1975. The adhesion to the NPT was a crucial part of *Ostpolitik*, and would mean burying the debate on the ‘enemy clauses’ – Articles 53 and 107 of the United Nations Charter.<sup>20</sup>

Also noteworthy was the role of a part of the nuclear industry in lobbying for adhesion to the NPT. A 1969 article in *Atomwirtschaft*, a magazine connected with atomic-energy companies, announced that postponing the signature of the NPT would ‘endanger the

<sup>13</sup>BMWi, *Verzeichnis der Anliegenden Unterlagen*, Heft 8, 2.

<sup>14</sup>Lars Colschen, *Deutsche Außenpolitik* (Paderborn: UTB GmbH, 2010).

<sup>15</sup>Matthias Küntzel, *Bonn and the Bomb: German Politics and the Nuclear Option* (Basingstoke: Palgrave Macmillan, 1995), 70.

<sup>16</sup>Küntzel, *Bonn and the Bomb*, 88.

<sup>17</sup>BMWi, “Compte Rendu Officiel de La Assemblée de l’Union de l’Europe Occidentale,” 17 October 1968, B102 433984, 71, BArch. The CSU is the Bavarian branch of the Christian Democrats, in which Strauss was one of the main exponents until his death in 1989. See Franz Josef Strauss, *Die Erinnerungen* (Munich: btb Verlag, 1989).

<sup>18</sup>Theodor Knepper, *Aufbruch Ins Atomzeitalter: Der ‘Atomplan Der SPD’ Als Ergebnis Innparteilicher Willensbildung Und Seine Umsetzung Im Rahmen Einder Eigenständigen Atompolitik von 1955 Bis 1960*. Magisterarbeit, Bielefeld: University of Bielefeld, 1988.

<sup>19</sup>Bundestag, 5. Sitzung, Angabe Einer Erhörung Der Bundesregierung, Antworten von Bundeskanzler Willy Brandt, 18 October 1969, Bundestag, online depository. [dip21.bundestag.de/dip21/btp/06/06005.pdf](http://dip21.bundestag.de/dip21/btp/06/06005.pdf), 23 (accessed March 28, 2019).

<sup>20</sup>Bundestag, 5. Sitzung, Angabe, 23. See also Küntzel, *Bonn and the Bomb*, 119.

competitiveness of West German industry a great deal more than signing it would'.<sup>21</sup> This was because of possible controls on importing nuclear-related materials and technology, as well as further obstacles to cooperation agreements. These concerns from the atomic industry were felt by both the SPD, and, even more, by its coalition partner, the Free-Democrats (FDP).<sup>22</sup> In that regard, Brandt sought to unify his foreign and economic policies, as illustrated by his personal involvement in pursuing new markets for the West German nuclear industry. In 1973, Brandt personally lobbied, for example, Yugoslavia's leader, Marshall Tito, on behalf of the Kraftwerkunion's (KWU's) bid to build a nuclear reactor in Slovenia.<sup>23</sup>

In 1970, West Germany, the United States, the United Kingdom, and the Netherlands established the uranium enrichment consortium the Urenco Group. The consortium was a way to bypass the limitations imposed by the 1954 Paris Accords and for Bonn to acquire uranium for its light-water reactors.<sup>24</sup> The Paris Accords granted the FRG full sovereignty and enabled its admission to NATO, but they also forbade Bonn from enriching uranium or producing plutonium in its territory, as part of the effort to counter possible proliferation ambitions.<sup>25</sup> The trilateral cooperation with the United Kingdom and the Netherlands was, therefore, crucial for the sustainability of the West German nuclear industry.

Urenco was extremely important in the 1975 A-Deal for two reasons: (1) its gas-centrifuge uranium enrichment technology was the first choice for the Brazilians and West Germans, but its export was vetoed by the Dutch and British; and (2) Urenco was the temporary supplier of enriched uranium to Brazil until the country's own enrichment facilities became functional.<sup>26</sup>

In 1974, Brandt renounced his position as chancellor after one of his closest advisors, Günter Guillaume, was exposed as an East German spy. Brandt was followed by Finance Helmut Minister Schmidt, who was in office until 1982 and under whom the nuclear agreement with Brazil was signed. Schmidt would continue Brandt's *Ostpolitik*, but with 'some footnotes'.<sup>27</sup> The new chancellor sought more flexible relations with the United States and France within NATO, to enable the FRG to assume a moderator role between both superpowers.<sup>28</sup> On the one hand, this flexibility was facilitated by his good personal

<sup>21</sup>Küntzel, *Bonn and the Bomb*, 119.

<sup>22</sup>A key player in the FDP was Walter Schell. He was a strong promoter of the nuclear industry and the construction of new power plants, as a way to keep up the rate of growth of the West German economy. As federal president, he declared in a private telegram that it was 'important to build new nuclear power plants. [...] There are risks associated with nuclear energy, but there are also risks associated with avoiding nuclear energy. For me, the later are bigger and more important than the former.' Bundespräsidentenamt, Brief von Bundespräsident Walter Schell an Den Minister Für Wirtschaft, Mittelstand und Verkehr Baden-Württemberg. Betr.: Kernkraftwerke Süd (Wyhl), 14 February 1977, B122/16556. BAArch (author's own translation). A similar view was held by members of the SPD – see Volker Hauff, "Kernergie – Herausforderung Für Die SPD," *Neues Forum*, 1977. Archiv der Sozialen Demokratie (ASD-FES), Bonn.

<sup>23</sup>Gray, *Commercial Liberties and Nuclear Anxieties*, 452.

<sup>24</sup>"Informação Para o Ministro de Estado, de Paulo Nogueira Batista Sobre Enriquecimento de Urânio," *Secreto, Arquivo Pessoal de Paulo Nogueira Batista*, April 1971, Contemporary Brazilian History and Documentation Centre in Fundação Getúlio Vargas (CPODOC-FGV), Rio de Janeiro. For an analysis of the 1954 Paris Accords, see Geier, *Schwellenmachtand Küntzel, Bonn and the Bomb*.

<sup>25</sup>The full text of Protocol No III of the Paris Accords is available at [https://avalon.law.yale.edu/20th\\_century/we005.asp](https://avalon.law.yale.edu/20th_century/we005.asp), accessed 9 April 2020.

<sup>26</sup>For an analysis of the role of reactors in Brazil's nuclear policy, see Renata Dalaqua, "We Will Not Make the Bomb Because We Do Not Want to Make the Bomb," *The Non-Proliferation Review* (2019): 1746–66.

<sup>27</sup>Helmut Schmidt, "Die Internationale Verantwortung Der Bundesrepublik Deutschland," *Neue Gesellschaft Frankfurter Heft*, 1976, 397, ASD-FES.

<sup>28</sup>Schmidt, *Die Internationale Verantwortung*, 397. See also Kristina Spohr, *The Global Chancellor: Helmut Schmidt and the Reshaping of the International Order* (Oxford: Oxford University Press, 2016), for a more detailed analysis of Schmidt's foreign policy.

relations with US President Gerald Ford and French President Valéry Giscard d'Estaing. On the other, it was harmed by the tensions between Schmidt and Carter.

Schmidt's foreign policy combined *Ostpolitik* with an emphasis on dialogue between the Global North and South. This last issue was closely related to the global economic crisis, the crisis in the exports of primary materials, and the 1974 oil shock.<sup>29</sup> For the Social-Liberal coalition, atomic energy was a symbol of status – one which would put West Germany on equal standing with its international partners in the Western world.<sup>30</sup> But it was also a possible solution to the energy crisis following the oil shock.<sup>31</sup> The pursuit of energy self-sufficiency was at the core of many European countries' energy policies in the mid- to late-1970s, including West Germany.<sup>32</sup> Self-sufficiency meant that the West German 'primary energy policy objective must be to reduce our dependence on the OPEC countries, especially in the case of mineral oil, given the associated risks', as highlighted by the then economy minister, Dr Hans Friedrichs of the FDP.<sup>33</sup>

Nuclear fission provided a non-intermittent, reliable, and non-polluting source of energy.<sup>34</sup> It was also a growing market with considerable future potential. West Germany was, furthermore, already a member of the London Group, an international arrangement responsible for drafting the guidelines on nuclear exports. Analysts in Bonn drew parallels between the Organization of the Petroleum Exporting Countries (OPEC) and the London Group – which was expected to gain more significance in the upcoming years.<sup>35</sup> The London Group, or the Nuclear Suppliers Group (NSG), was an initiative to 'coordinate the export policy guidelines and regulation of major states' in the nuclear sector, including non-NPT signatories, like France.

The NSG was born as a reaction to the 1974 'peaceful' Indian nuclear test, which had exposed the limits of existing safeguards protocol. The nuclear devices exploded in the Pokhran-I test were built with plutonium diverted from the CIRUS reactor, supplied by Canada, and with heavy water provided by the United States, leading US Secretary of State Henry Kissinger and President Ford to reassess Washington's non-proliferation policy. The answer was assembling the major nuclear exports in a small-number format, aimed at countering future proliferation. Targeted were 'deals promoting exports of sensitive technology, such as the controversial Brazil-West German agreement'.<sup>36</sup>

More than an alternative to oil, however, Bonn pushed for a total re-think of the role of nuclear technology in West Germany. Atomic energy was integrated into the overall

<sup>29</sup>Relations with non-nuclear-weapon states from the 'Third World' were emphasised in the guidelines issued by the 1980 NPT Revision Commission. AA, Vermerk. Betr.: Überprüfungskonferenz Zum Nichtverbreitungsvertrag, Hier: Ressortbesprechung Bom, 22 March 1979, B136 1112, BArch.

<sup>30</sup>A similar status position with other great powers was at the core of Schmidt's understanding of 'world politics' (*Weltpolitik*). See Spohr, *The Global Chancellor*.

<sup>31</sup>Bundespräsidentenamt, Brief an Dem Bundespräsident, Verf. RD Dr. Schnurr. Betr.: Nutzung Der Kernenergie in Frankreich Und in Der Bundesrepublik Deutschland, 13 February 1981, B122/16556, BArch.

<sup>32</sup>Hilfrich, "Roots of Animosity," 294.

<sup>33</sup>Bundespräsidentenamt, Rede Des Bundesministers Für Wirtschaft Dr. Hans Friedrichs Anlässlich Der Reaktortagung Des Deutschen Atomforums, B122/16556, 10, 1977, BArch (author's own translation).

<sup>34</sup>Secretaria de Comunicação da Presidência (SECOM), Livroto Programa Nuclear Brasileiro: Governo Presta Contas, Secretaria de comunicação social da presidência da república, Arquivo de Paulo Nogueira Batista, 1981, CPDOC-FGV.

<sup>35</sup>Bundespräsidentenamt, Rede Des Bundesministers Für Wirtschaft Dr Hans Friedrichs Anlässlich Der Reaktortagung Des Deutschen Atomforums, B122/16556, 1977, BArch.

<sup>36</sup>William Burr, "A Scheme of 'Control': The United States and the Origins of the Nuclear Suppliers' Group, 1974–1976," *The International History Review* 36, no. 2 (2014): 252–76 (253).

economic plan of the Schmidt administration.<sup>37</sup> He declared that nuclear energy remained a 'vital' source and 'should not be renounced'.<sup>38</sup> And Minister of Research and Technology Hans Matthöffer classified nuclear research as a top priority, as he increased its budget.<sup>39</sup> A larger scale was, however, needed to maintain the competitiveness of the West German nuclear industry. Expanding the sector to new markets was, therefore, a matter of survival.

In the 1960s and 1970s, the global market for nuclear reactors was relatively small, since the Eastern Block was out of reach and most Western industrialised countries already had their own atomic industries.<sup>40</sup> The most crucial cases left were Brazil, Iran, and South Africa. From those, Brazil was the most viable possibility, due to its historical and economic ties with West Germany, as well as given its growing global political significance worldwide. Bonn-Brasilia likemindedness in nuclear affairs was already cemented over the NPT negotiations, as outlined earlier. Proximity with Brazil could lead, furthermore, to deepening relations with 'Third World' countries, because of Brasilia's 'leadership position in the G-77'.<sup>41</sup>

Partnering with Brazil was not unanimously approved of within Schmidt's coalition. He was accused of resuming Adenauer's ambiguous atomic policy.<sup>42</sup> These criticisms arose again in 1989, following the official uncovering of Brazil's parallel nuclear programme.<sup>43</sup> Critics argued that Brazil bypassed its international obligations so as to develop a nuclear weapons-related programme and therefore mismanaged West German technology, even though the civilian programme was separated from the parallel military one in terms of institutional structure and budget.<sup>44</sup>

## West German interests in the Brazilian deal

Brazil and Germany have a long history of cooperation and intensive trade relations. Those relations also had implications for nuclear cooperation. In 1954, Admiral Álvaro Alberto, the head of the Brazilian National Research Council (CNPq), went to West Germany to negotiate the acquisition of nuclear research reactors capable of producing UF<sub>6</sub>. In the same year, those reactors were shipped from Göttingen to Rio de Janeiro in secrecy by a group of scientists responsible for resuming the West German atomic research programme, namely Paul Harteck (University of Hamburg), Wilhelm Groth (University of Bonn), and Konrad Beyerle (Max Planck Institute at Göttingen). The

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<sup>37</sup>Overcoming the negative effects of the world economic crisis was the priority for Schmidt during the first years of his administration. See Spohr, *The Global Chancellor* and Heep, *Helmut Schmidt und Amerika*. The relevance of including nuclear energy in the German energy matrix was highlighted by Friedrichs. See Bundespräsidentenam, *Rede Des Bundesministers, 1977*.

<sup>38</sup>Schmidt, "Regierungserklärung Für Die Legislaturperiode," Bundeskanzleramt, 1976, 24, ASD-FES.

<sup>39</sup>Rogers and Cervenka, *The Nuclear Axis*, 43.

<sup>40</sup>Romberg, *How to Further Develop the Non-Proliferation Regime?* 8.

<sup>41</sup>"Kissinger Lehnt Kritik an Bonner Regierung Ab. Kein US-Protest Wegen Des Atomgeschäftes Mit Brasilien – 'Sonst Springt Paris Ein'," *Stuttgarter Zeitung*, 24 June 1975, B136 30554, BArch.

<sup>42</sup>For more on Konrad Adenauer's nuclear policy, see Küntzel, *Bonn and The Bomb*.

<sup>43</sup>Hermann Bachmaier, "Das Deutsch-Brasilianische Nuklear-Abkommen: Zur Notwendigkeit, Die Militärische Nutzung Der Kernenergie Zu Verhindern," *Sozialdemokratischer Pressedienst* 44, Jahrgang/184 (25 September 1989): 1–6. See also Bundestag, Drucksache 12/6253, Antwort Der Bundesregierung – Drucksache 12/6056 – Deutsch-Brasilianisches Nuklearabkommen, 12 Wahlperiode, 30 November 1993.

<sup>44</sup>For critiques see Bundestag, Drucksache 12/6253. For an analysis of the Brazilian nuclear programme see Spektor, "The Evolution of Brazil's Nuclear Intentions."



centrifuges arrived in Brazil in 1956, after being found and retained by the American customs authority.<sup>45</sup>

In 1974, Bonn promptly showed interest in cooperating with Brazil, after President Geisel announced the intention to expand the country's nuclear programme. Brazil fitted with Schmidt's reading of *Ostpolitik*: it was the biggest economy in Latin America, an active player in the Global South, South America's largest country, and a thriving emerging market with 'a predictable growth of at least 7% a year until 1990'.<sup>46</sup> Brazil was, furthermore, an already known partner within the West German scientific community because of the previous contacts established in the 1950s, as well as a former political ally in its criticism of the NPT.

The FRG had three main interests in signing the A-Deal with Brazil: (1) strengthening the ruling socio-liberal coalition after Brandt's resignation; (2) increasing the West German share of the global nuclear market; and (3) making viable the jet-nozzle process for enriching uranium. The first two interests were strictly connected, as the West German nuclear industry was a relevant supporter of the Social-Liberal coalition. The third interest, however, was developed gradually due to the impossibility of transferring Urenco's gas centrifuges to Brazil.

Strengthening the SPD-FDP coalition in government was a significant concern for Schmidt in his first years of government. Schmidt took office after the 'Guillaume Affair' terminated Brandt's chancellorship and amid increased opposition from the Christian Democrats in the Bundestag.<sup>47</sup> Not only was the capacity of the SPD to lead called into question, but the possible consequences of the party's foreign policy guidelines were also brought to the fore too. Schmidt maintained Brandt as the secretary-general of the SPD to show continuity with his predecessor, and as a way to ensure partisan support. Unlike Brandt, most in the SPD considered Schmidt 'the outsider from Hamburg – respected, but not loved'.<sup>48</sup>

Schmidt's approach to ensuring public support in his first years of office was to overcome the economic crisis that had harmed West Germany. For that, Schmidt 'brought with him the export-oriented outlook characteristic of his home base in Hamburg' as a means to harvest a positive agenda for the government.<sup>49</sup> His main priority was to regain economic strength and tackle unemployment – to be achieved as quickly as possible, as the CDU's numbers in the polls were rising.<sup>50</sup> Discontent with the government was growing, particularly among unions, which were the traditional basis of the SPD.<sup>51</sup> As part of a broader export-oriented economic programme, the Brazilian Deal would ensure a sustainable rise in West German employment rates over the following

<sup>45</sup>Frederico Fuellgraf, *A bomba pacífica: O Brasil e outros cenários da corrida nuclear* (São Paulo: Editora Brasiliense, 1988), 44. See also C. Patti, "The Origins of the Brazilian Nuclear Programme, 1951–1955," *Cold War History* 15, no. 3 (2015): 353–73.

<sup>46</sup>Central Intelligence Agency (CIA), 1983, "Brazil's Changing Nuclear Goals: Motives and Constraints: Special National Intelligence Estimate," Secret, Approved release date: 19 September 2011, US National Archives and CIA online depository. Available at <https://www.cia.gov/library/readingroom/document/0005743962> (accessed February 11, 2015).

<sup>47</sup>Strauss, *Erinnerungen*.

<sup>48</sup>Spoehr, *The Global Chancellor*, 55.

<sup>49</sup>Gray, *Commercial Liberties and Nuclear Anxieties*, 453.

<sup>50</sup>Carsten Schmidt, "Helmut Schmidt: Kontinuität Und Konzentration," in *Das Wort Hat Der Herr Bundeskanzler: Eine Analyse Der Großen Regierungserklärungen von Adenauer Bis Schröder*, edited by K.-R. Korte, 193–216 (Wiesbaden: Westdeutscher Verlag, 2002).

<sup>51</sup>Schmidt, *Helmut Schmidt*, 193.

15 years, as well as conquer a restricted and competitive market. The government expected more than 100,000 new hirings over those 15 years.<sup>52</sup> The Brazilian Deal was, therefore, a ‘realist’ policy, one which focused on economic results in its relations with the Third World.<sup>53</sup>

The second interest behind the A-Deal was pushing the international competitiveness of the West German nuclear industry, whose support for the ruling SPD-FDP coalition was forged during the negotiations over adhering to the NPT. The Brazilian agreement was an essential step in the global expansion of the West German nuclear industry to promising new markets.<sup>54</sup> This expansion would place West Germany, already a ‘great economic power’, on equal footing with other countries like France and the United States, which were already negotiating with countries like Argentina and Pakistan. In that regard, strengthening the German nuclear industry would strengthen Bonn’s political power.<sup>55</sup> As stated in a 1983 report by the US Central Intelligence Agency (CIA), Bonn was deeply concerned about maintaining ‘its reputation as a high-quality supplier of nuclear technology and equipment’.<sup>56</sup>

The most critical player in that regard was the KWU, a joint venture between West German firms Siemens and AEG, in charge of implementing the agreement with Brazil. The KWU hoped to ‘establish its footing in the lucrative international market for reactors – a trade hitherto dominated by US giants General Electric and Westinghouse’.<sup>57</sup> Over the 15 years of partnership, the agreement was expected to double West German participation in the international nuclear market in terms of constructed power plants. This expansion would place the FRG as an equal competitor with more established suppliers, like France. The industry would also have access to an additional source of uranium. This was relevant for ensuring the country’s energy supply in the face of a foreseeable ‘shortage of natural uranium’ due to the possible establishment of ‘an international cartel’ inspired by OPEC.<sup>58</sup> In that regard, the ghost of the 1974 oil shock was also behind the need to guarantee a reliable and competitive domestic nuclear industry.

Brazil was also crucial in the broad West German strategy to expand its atomic industry to other potential markets. The A-Deal was not only the most significant export treaty ever negotiated by Bonn, but – to the West German mind – it was also a ‘model’ for future cooperation ‘between industrial’ and developing states.<sup>59</sup> In parallel to the negotiations with Brazil, the FRG started talks over a similar deal with Iran – which was aiming at diversifying its energy mix. Like Brazil, Iran was a traditional partner of Germany. Germany had been ‘the founder of Persian industry’ by providing industrial cooperation and personnel training in the 1920s.<sup>60</sup> Iran also played a

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<sup>52</sup>KTG, 1977, Brief an Der Bundespräsident Walter Schell. von Dem Kerntechnischer Gesellschaft Im Deutschen Atomforum E. V. (Vorsitzer Prof. Dr. Hans Levi), B122/16556, BArch. See also Appendix.

<sup>53</sup>Schmidt-Reise, “Große Luftblasen,” *Spiegel Online*, 16 April 1979. <https://www.spiegel.de/spiegel/print/d-40350275.html> (accessed February 11, 2019).

<sup>54</sup>KTG, 1977, Brief an Der Bundespräsident Walter Schell.

<sup>55</sup>Romberg, *How to Further Develop the Nonproliferation Regime?* 11.

<sup>56</sup>CIA, *Brazil’s Changing Nuclear Goals*.

<sup>57</sup>Gray, *Commercial Liberties and Nuclear Anxieties*, 452.

<sup>58</sup>Schmitz-Wenzel, Telegramm. Betr.: Konferenz Der Hauptlieferländer Für Zivile Nukleartechnologie, AA, 20 June 1975, B136 30554, 166, BArch.

<sup>59</sup>Schmitz-Wenzel, Telegramm. Betr.: Konferenz Der Hauptlieferländer Für Zivile Nukleartechnologie,” 20 June 1975, B136 30554, 165, BArch.

<sup>60</sup>Matthias Küntzel, “Hidden Diplomacy: The German–American Dispute over Iran,” *American Foreign Policy Interests* 36, no. 4 (2014): 225–33 (226).

significant role in Intra-German relations. While Iraq was the primary partner of East Germany in the Middle East, with preferential agreements to export oil and import military vehicles and small arms, Iran kept close connections with the FRG, via similar trade agreements.<sup>61</sup> It was, therefore, a natural partner to receive West German cooperation, following Brazil.

The agreements with both Brazil and Iran were closely intertwined in the West German negotiation process in 1975.<sup>62</sup> In a manuscript, Dr Schmitz-Wenzel, one of the negotiators involved in both agreements, stated that restrictions to the contracts with Brazil and Iran would violate the spirit of the NPT – even vis-à-vis the global fear of further proliferation following the Indian nuclear test in 1974.<sup>63</sup> Some in the SPD, such as its deputy Gerhard Flämig, regarded the A-Deal with Brazil as the manifestation of a right established by the NPT. If signing the deal was not possible, adhering to the NPT would have made no sense.<sup>64</sup> Schmitz-Wenzel announced that even though Brazil was a ‘leader of the North-South Conflict’, it was a more stable country than Iran. Brazil also had larger reserves of uranium. ‘[G]ain[ing] access to Brazilian uranium deposits’ was central to sustaining the West German nuclear industry domestically and to expanding it overseas, notwithstanding the ‘considerable speculation about the [real] size of Brazil’s uranium reserves’.<sup>65</sup> Besides that, Brazil also had ‘large deposits of thorium’, a possible future source of nuclear energy.<sup>66</sup>

The third interest was making the jet-nozzle technology viable. This interest was not one of the initial motivations behind the Brazilian Deal. Since the beginning of the negotiations, Brasilia preferred the gas-centrifuge enrichment technique – a technology perfected by Urenco. For West Germany, however, selling gas-centrifuge reactors was a thorny issue for two reasons. The first was with regard to nuclear proliferation. For Peter Hermes, the leader of the West German negotiation team and head of the trade division of the federal Foreign Office, it would be dangerous for European firms to sell gas centrifuges that could produce weapons-grade uranium.<sup>67</sup> Second, the export of Urenco’s technology to Brazil was vetoed by the Dutch and the British. The only alternative left was the jet-nozzle.

Even though it was not Brazil’s first choice, the jet-nozzle would provide the country with a reliable supply of fuel for its power plants – after US export restrictions made the import of enriched uranium unviable.<sup>68</sup> The jet-nozzle technology was developed by Dr E. Becker at the Kernforschungszentrum Karlsruhe. Through the jet-nozzle, ‘extremely centrifugal forces in a curved flow of UF<sub>6</sub> diluted by a light gas’ produce U235, which fuels nuclear reactors.<sup>69</sup> The technology was promising, but it needed scale to become

<sup>61</sup>Harald Möller, *Waffen für Iran und Irak: deutsche Rüstungsexporte und ihre Querverbindungen zu den ABC-Waffenprogrammen beider Länder; Ursachen, Hintergründe, Folgen* (Berlin: Köster, 2006), 52.

<sup>62</sup>The connection between both agreements was highlighted in a press conference led by Dr Schmitz-Wenzel on major export agreements of civilian nuclear technology. AA, Telegramm von Mr. Dr. Schmitz-Wenzel an Herrn VLR I Oldenkott. Betr.: Konferenz Der Hauptlieferländer Für Zivile Nukleartechnologie, 20 June 1975, B136/30554, BArch.

<sup>63</sup>Schmitz-Wenzel, *Konferenz Der Hauptlieferländer*.

<sup>64</sup>Gerhard Flämig, “Die Vorteile Des NV-Vertrags Nutzen! Zur Geplanten Deutsch-Brasilianischen Zusammenarbeit in Der Kernenergie, von Gerhard Flämig, MdB,” SPD-Pressedienst (P/XXX/85), 6 May 1975, ASD-FES.

<sup>65</sup>CIA, *Brazil’s Changing Nuclear Goals*; Bundestag, 2016, “Ausarbeitung: Das Deutsch-Brasilianische Atomabkommen von 1975 Aus Heutiger Sicht,” WD1 – 3000 – 049/13, Wissenschaftliche Dienst, 6.

<sup>66</sup>Bundestag, “Das Deutsch-Brasilianische Atomabkommen,” 6.

<sup>67</sup>Gray, *Commercial Liberties and Nuclear Anxieties*, 454.

<sup>68</sup>Bandarra, *A Luta contra o Tordesilhas Nuclear*.

<sup>69</sup>E.W. Becker, P. Nogueira Batista, and H. Vöcker, “Uranium Enrichment by the Separation Nozzle Method Within the Framework of German/Brazilian Cooperation,” *Nuclear Technology* 52, no. 1 (1 January 1981): 105–14 (105).

commercial, and it could not be implemented in West Germany, since the 1954 Paris Agreement forbade Bonn from enriching uranium in its territory.<sup>70</sup>

The first attempt to scale up the jet-nozzle technology was with South Africa, through informal negotiations between the Minister of Education and Science under Brandt, Hans Leussing, and the South African ambassador in Bonn, Donald Sole, in 1969. In 1973, the transfer of technology from Karlsruhe to the secret enrichment facility in Pelindaba was agreed under the framework of a ‘comparative study’. The enrichment technology was licensed to South Africa in 1974, and it was kept even after the West German company Steinkohlen-Elektrizität AG (STEAG) withdrew its financial participation in Pelindaba’s enrichment plant in March 1976.<sup>71</sup>

West German officials claimed the uranium produced through the jet-nozzle process was not suitable for building bombs because the concentration of U235 in the final product was below 40%.<sup>72</sup> For Hermes, the ‘very inefficiency’ of the jet-nozzle process, which required vast amounts of energy to even function, ‘meant that it would be difficult for the Brazilians to abuse the technique for military purposes’.<sup>73</sup> According to Article 3 of the 1975 nuclear deal, the equipment installed in the Angra 2 power plant would only enable levels of U235 between 1.9% and 3.2%.<sup>74</sup> Unlike with South Africa, however, the A-Deal with Brazil would be entirely legal under international law and safeguarded by the IAEA.<sup>75</sup>

## The way through the deal: negotiations and external pressures

### *The first round of negotiations (1974–76)*

The negotiation process surrounding the 1975 nuclear agreement was not straightforward. On the Brazilian side, the deal was strongly influenced by the difficulties in importing enriched uranium from the United States, still under the Ford administration. For Brazil, the most critical element of the agreement was ensuring the full transfer of technology and know-how to enrich uranium, as a way to ensure long-term energy security.<sup>76</sup> This transfer of technology was a central advantage of the West German proposal vis-à-vis that of competitors like those from France and the United States.

<sup>70</sup>AA, Ministerialdirektor Lautenschlager an Botschafter von Staden, Washington, VS-Vertraulich. Fernschreiben Nr 523, 25 Mai 1976, Betr.: Gespräch Bundesminister – AM Kissinger Am 23 Mai 1976 in Bonn, 1. Januar bis 30. Juni, 25 May 1976, Akten zur Auswärtigen Politik der Bundesrepublik Deutschland (AAPBD) (Berlin: De Gruyter, 1976); ‘Informação Para o Ministro de Estado, de Paulo Nogueira Batista Sobre Enriquecimento de Urânio,’ Secreto, PNB, April 1971, CPODOC-FGV.

<sup>71</sup>For a detailed process tracing of the negotiation between West German and South African officials, see Rogers and Cervenka, *The Nuclear Axis*, chap. 3.

<sup>72</sup>Rogers and Cervenka, *The Nuclear Axis*,xiv.

<sup>73</sup>Gray, *Commercial Liberties and Nuclear Anxieties*, 454. This theory proved, nonetheless, flawed after Pretoria successfully converted nozzle technology into nuclear explosives.

<sup>74</sup>Brazil and Germany, ‘Acordo Entre o Governo Da República Federativa Do Brasil e o Governo Da República Federal Da Alemanha Sobre Cooperação No Campo Dos Usos Pacíficos Da Energia Nuclear,’ 1975, Divisão de Atos Internacionais (DAI), MRE. For technical specifications of Angra 2 enrichment capabilities see Federal Register, ‘Federal Register/Vol. 61, No. 177/Wednesday, 11 September 1996/Notices,’ 11 September 1996, <https://www.federalregister.gov/> (accessed September 18, 2020).

<sup>75</sup>The cooperation with the IAEA was one of the main pre-requisites determined by the Bundestag for approving the agreement. See Bundestag, Drucksache 12/6253, Antwort Der Bundesregierung – Drucksache 12/6056 – Deutsch-Brasilianisches Nuklearabkommen, 12 Wahlperiode, 31 November 1993.

<sup>76</sup>Diversifying the Brazilian energy matrix was a priority under ‘Plano 90’, a development programme presented by President Geisel to sustain high economic growth until the year 1990. See Carlo Patti, ‘O Programa Nuclear Brasileiro Entre Passado e Futuro,’ *Boletim Meridiano* 47 14, no. 140 (2013): 49–55. A report by the German parliament also highlighted the Brazilian need to ensure a ‘second leg’ for its energy matrix – that is, reduce its dependence on hydropower. See Bundestag, *Das deutsch-brasilianische Atomvertrag*.

The first round of negotiations was conducted trilaterally between Brazil, the FRG, and France. West Germany was invited to participate after bilateral talks between Paris and Brasilia failed to bear fruit, due to a lack of a 'clear answer by the French' and due to limitations faced by France on cooperation involving gas centrifuges.<sup>77</sup> Bonn and Paris offered Brazil the immediate transfer of enriched uranium, which could also supply the Angra 1 power plant (built by Westinghouse), the transfer of a pilot reactor, and the training of Brazilian personnel in France and West Germany to ensure the complete transmission of know-how to Brazil over ten years.<sup>78</sup>

Bilateral negotiations between Brasilia and Bonn were, nonetheless, already underway. These negotiations were grounded in previous cooperation with Brazil in the late 1960s, when the FRG's offer was rejected by President Emílio Garrastazu Médici – who chose a more lucrative agreement with Westinghouse.<sup>79</sup> Unlike previously, however, the 1975 agreement included the full transfer of the experimental jet-nozzle technology to Brazil. It also included building light-water reactors in all eight power plants. West Germany would, furthermore, 'gain access to Brazilian uranium deposits', ensuring the supply for its power plants.<sup>80</sup> The agreement would be implemented by five binational companies and led to the creation of *Nuclebras*, a state-owned enterprise founded to manage the nuclear programme.<sup>81</sup>

International and domestic criticism of the Brazilian Deal during this initial round of negotiations was mild. In the United States, Democratic senator John Pastore harshly criticised the negotiations between Brasilia and Bonn by calling them 'a mockery of the Monroe Doctrine', whereas the *Washington Post* labelled them 'reckless' in June 1975.<sup>82</sup> These criticisms were, however, overlooked by Henry Kissinger, whose international strategy of balancing required strengthening regional poles of power. The success of such a strategy took precedence over proliferation concerns. This was particularly true in the case of Brazil and West Germany, two allied countries chosen as primary partners in their respective regions.

Kissinger feared that if the agreement turned unviable, 'Paris would step in'.<sup>83</sup> As an antagonist to the NPT, France had fewer institutional commitments to non-proliferation than West Germany. Paris was, furthermore, already pursuing dubious negotiations to export reprocessing technology to Pakistan and South Korea, casting a shadow over its non-proliferation commitments.<sup>84</sup> Kissinger also feared that frictions with Brazil could move it away from the Western sphere of influence. As highlighted by the senior Department of Defence attaché in France, Lieutenant-General Vernon Walters: 'If Brazil were to be lost, it would not be another Cuba. It would be another China.'<sup>85</sup>

<sup>77</sup>Bundestag, 1993, Drucksache 12/6253, 4.

<sup>78</sup>Paulo Nogueira Batista, "Notas tomadas por Paulo Nogueira Batista em reunião com o ministro Ueki," Handwritten notes, 11 June 1975, PN/N, CPDOC-FGV, MRE (author's own translation).

<sup>79</sup>In the 1971 bidding process to construct Angra 1, Westinghouse offered the lowest cost per KWh of energy produced – 0,0523 Cr\$/KWh – compared with the 0.0592 Cr\$/KWh of TPNG, the second cheapest. Besides that, Washington supported the agreement by providing funding through Eximbank. See Senado Federal, "A Questão Nuclear: Relatório da Comissão Parlamentar de Inquérito do Senado Federal, Resolução No 69–78. Relator: Senador Milton Cabral," 17 August 1982, 171, Senado Federal, <https://www2.senado.leg.br/bdsf/handle/id/194590> (accessed September 18, 2020).

<sup>80</sup>CIA, *Brazil's Changing Nuclear Goals*.

<sup>81</sup>See Appendix.

<sup>82</sup>Hilfrich, "Roots of Animosity," 281.

<sup>83</sup>"Kissinger Lehnt Kritik," *Stuttgarter Zeitung*.

<sup>84</sup>Burr, "A Scheme of Control," 269.

<sup>85</sup>Memorandum from the Senior Department of Defence Attaché in France (Walters) to the President's Assistant for National Security Affairs (Kissinger), Paris. US National Archives, Nixon Presidential Materials, NSC Files, Kissinger Office Files, box 1, no date (probably from 1968). Department of State, 116, <https://history.state.gov/historicaldocuments/frus1969-76ve10/d116> (accessed February 11, 2019).

Kissinger's strategy focused, therefore, on shielding Brazil from pressure on the deal.<sup>86</sup> The UK government, conversely, expressed its grave concerns over the Brazilian deal. London 'lodged a "fairly strong" diplomatic protest when Bonn requested the export of enrichment technology to Brazil through Urenco'. A British diplomat accused Bonn of acting in a 'fairly irresponsible way' in negotiating with Brazil.<sup>87</sup>

Inside West Germany, discussions in the Bundestag focused on two issues: (1) the extent of the technology transferred to Brazil (i.e. whether the KWU should sell reprocessing facilities); or (2) whether Bonn should export nuclear technology to Brazil *at all*. The first issue was raised by the CDU/CSU opposition based on the obligations of the NPT.<sup>88</sup> Schmitz-Wenzel answered in a telegram that 'this was not a problem' because Brazil 'accepts all safeguards'.<sup>89</sup> The second issue was raised by the 'anti-nuclear wing' in the SPD. This was a direct consequence of the anti-nuclear protests against the construction of a power plant in the city of Wyhl, in the German federal state of Baden-Württemberg.<sup>90</sup> Historian Jan-Henrik Meyer considers those protests 'the birthplace of the West German anti-nuclear movement'.<sup>91</sup> These concerns were, however, belittled by the supporters of the agreement. Gray highlights that incidents such as the protests in Wyhl 'reinforced the determination of government and industry to proceed with their ambitious programme of nuclear exports: civil society was less likely to prove an obstacle in, say, Spain or Iran'.<sup>92</sup>

### ***Follow-up negotiations (1975–78): the Dutch, Urenco, and plutonium***

Brazil's first choice was to receive Urenco's enrichment technology. This was, however, vetoed by Britain and – most importantly – the Netherlands, 'under the inspiration of the United States'.<sup>93</sup> In a handwritten note, Schmitz-Wenzel stated that any restrictions imposed on the agreements with Brazil and Iran would 'violate the spirit of the NPT' – even after the 1974 Indian nuclear test. Schmitz-Wenzel declared Brazil a stable country, despite being a 'leader of the North-South Conflict'.<sup>94</sup>

After the 1975 agreement was signed, Urenco would again play a significant role in the follow-up negotiations over making it viable. The A-Deal included an initial export of enriched uranium by Urenco, while the jet-nozzle technology was still in the process of being developed. For Brazil, this point was vital to ensure a reliable supply of fuel – in case the jet-nozzle technology proved not as efficient as promised. For West Germany,

<sup>86</sup>Matias Spektor, *Kissinger e o Brasil* (Rio de Janeiro: Zahar, 2009).

<sup>87</sup>Hilfrich, "Roots of Animosity," 290.

<sup>88</sup>AA, Telegram Aus Teheran and Bonn, Betr.: Zusammenarbeit-Iran-Bundesrepublik Im Bereich Der Kernenergie, 8 August 1974, B136 11011, BArch; AA, Telegram Aus Teheran an Bonn, Betr.: Zusammenarbeit-Iran-Bundesrepublik Im Bereich Der Kernenergie, 9 August 1974, Hier: Besuch Etemads in Bundesrepublik und Manuscript Notes from on Brazil and Iran, B136 11011, BArch.

<sup>89</sup>AA, 8 August 1974, Telegram Aus Teheran and Bonn.

<sup>90</sup>Bundespräsidentenamt, 1975, Drucksache 7/3606 07.05.1975 – Antwort Der Bundesregierung to the Bundestag Über Des Baus Eines Kernkraftwerkes in Wyhl, BArch.

<sup>91</sup>Jans-Hendrik Meyer, "Where Do We Go from Wyhl?: Transnational Anti-Nuclear Protest Targeting European and International Organizations in the 1970s," *Historical Social Research/Historische Sozialforschung* 39, no. 1 (147) (2014): 212–35.

<sup>92</sup>Gray, *Commercial Liberties and Nuclear Anxieties*, 78.

<sup>93</sup>Congresso Nacional, Relatório No 13, "Comissão Mista de Inquérito Destinada a Apurar o Programa Autônomo de Energia Nuclear, Também Conhecido Como 'Programa Paralelo'," Relatório Final, 1990. Relator: Senador Severo Gomes. Testimony of Admiral Othon Luiz da Silva, <https://www2.senado.leg.br/bdsf/handle/id/194598> (accessed September 18, 2020).

<sup>94</sup>Schmitz-Wenzel, Telegram. Betr.: Konferenz Der Hauptlieferländer Für Zivile Nukleartechnologie, 20 June 1975, B136 30554, BArch.

ensuring this initial supply was tricky. According to the Urenco Treaty, enrichment was made in the United Kingdom and the Netherlands while gas centrifuges were assembled in West Germany.<sup>95</sup> All transfer of nuclear materials would have to be agreed with all three countries, reducing the competitiveness of the West German atomic industry.<sup>96</sup>

The FRG conducted talks with Urenco partners bilaterally. Talks with the United Kingdom were relatively easy, notably after Brazil agreed to sign a full safeguards treaty with the IAEA. By this time, the United Kingdom advocated a position similar to that of France and West Germany concerning the supplier's right to export the full cycle of nuclear technology, as long as it were adequately safeguarded.<sup>97</sup> The Dutch government, on the other hand, initially refused to authorise uranium exports to Brazil, unless it adhered to the NPT. The Dutch argued that, even with full safeguards, Brazil could employ reprocessing facilities to build a 'crude explosive device'.<sup>98</sup> Even though Bonn ensured that the A-Deal followed all the guidelines of the Nuclear Suppliers Group, the Netherlands kept up its denial – based on the Indian experience in 1974.

The Dutch position was also justified by fears that an agreement between Urenco and Brazil could delay, or even prevent, the construction of an enrichment facility in Almelo, in the northeast Netherlands. Almelo's project was agreed via a 1970 trilateral treaty between the FRG, the United Kingdom, and the Netherlands. In a first contracting bid, no private firm showed up – generating 'serious political problems' and raising 'considerable doubt concerning the economic viability of the project'.<sup>99</sup> This facility functioned with gas centrifuges that needed fuel from the United States to operate. Washington's rejection of the FRG-Brazil A-Deal was well known, and the Dutch feared cross-retaliation. The Netherlands, therefore, proposed to postpone the export authorisation to Brazil until after the Almelo facility had been built, leading to protests by Brasilia.<sup>100</sup>

Another concern raised by the Dutch and the British was the construction of a plutonium storage facility, in order to avoid that raw material being diverted to nuclear explosives, as happened in India. According to 'Article XII A 5' of the IAEA Statute, the disposal of plutonium had to be managed under an international regime that was as yet non-existent.<sup>101</sup> Without that regime, any foreign control arrangement would be understood by Brazil as intrusive due to 'the principle of extraterritoriality'.<sup>102</sup> Extraterritoriality meant that Brazil feared that, under such agreement, a plutonium disposal facility would not be entirely subject to Brazilian law and political control – an unacceptable solution.

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<sup>95</sup>"Memorandum, Foreign Minister Azeredo da Silveira, Information for the President of Brazil, 'Uranium Enrichment'," 2 April 1974, PNB ad 1973.10.05, 100–8, CPDOC-FGV. <http://digitalarchive.wilsoncenter.org/document/116875> (accessed March 04, 2016).

<sup>96</sup>CDU Deputy Kurt Birrenbach declared: 'We cannot [...] export reactors if we cannot deliver to our trade partners like Brazil or Argentina enriched fuel or uranium. We have no uranium resources of our own and no enrichment plant. We [...] do not accept a position of inferiority within the European realm, which would deadly endanger the unification process on our continent and [the] Atlantic partnership.' Kurt Birrenbach, *Letter to Ambassador Gerard C. Smith*, 22 May 1980, B196 40227, BArch.

<sup>97</sup>Hilfrich, "Roots of Anymosity," 290.

<sup>98</sup>AA, Deutsch-Niederländisches Regierungsgespräch, 014-StS-041/77 VS-Vertraulich, 13 January 1977, 5, AAPBD

<sup>99</sup>Letter from Dutch Prime Minister J.M. Den Uyl to Federal Minister Helmut Schmidt, 2 December 1976, B136/16532, BArch.

<sup>100</sup>Letter from Dutch Prime Minister, 5.

<sup>101</sup>AA, Referat 312 Betr.: TROIKA-Zusammenarbeit. Hier.: Gespräch Zwischen Bundeskanzler – MP van Agt, n.d. B136 16532, BArch.

<sup>102</sup>AA, Gespräch Des Herrn Bundeskanzlers Am Rande Des Europäischen Rats Am 5, Und 6 12 1977, Über Die Gasultrazentrifugenzusammenarbeit (Troika), 29 November 1977, B136 16532, 2, BArch.

According to the Brazilian foreign minister, Azeredo da Silveira, Brazil should reject any 'legal solution' that left Brazil in an inferior 'political and legal status' position when compared to other non-nuclear-weapons countries with peaceful atomic capabilities.<sup>103</sup>

The agreed solution to plutonium management was establishing an *ad-hoc* regime to control an operational plutonium storage facility in Brazil. In 1978, all three governments agreed that plutonium should be stored in Brazil under the supervision of West Germany, according to the guidelines of the 1970 Urenco treaty.<sup>104</sup> IAEA safeguards would follow the instructions of the agreement concluded between the agency, Brazil, and West Germany on 26 February 1976. The Netherlands and the United Kingdom would have access to the facilities upon request, and further changes in the agreement would have to have the consent of all three parts (Brazil, the FRG, and the IAEA).<sup>105</sup>

Furthermore, Brazil committed only to export – or re-export – reprocessed material with the consent of West Germany and upon notification of the IAEA, expanding, therefore, the terms of the 1976 safeguards agreement. West Germany, on its side, committed to notifying the Netherlands of all movements that involved related materials.<sup>106</sup> This concession was the FRG's latest strategy to keep Brazil to the 1975 nuclear deal. According to Chancellor Schmidt: 'The Netherlands should agree with the arrangement agreed in July; otherwise there is a risk that Brazil will turn to another partner (e.g. the USA or France) after the end of the commitment period (31 March 1978).'<sup>107</sup>

### **Third-party pressures**

Another obstacle critical for implementing the 1975 A-Deal was pressure from third-party countries – mainly from the Carter administration (1977–81). Unlike Ford, Carter considered non-proliferation a top priority of his administration. US pressure on Brazil and West Germany has already been widely studied, as outlined in the Introduction. For Carter, who maintained a turbulent personal relationship with Schmidt, the 1975 agreement would bring Brazil a step closer to developing a nuclear bomb.<sup>108</sup>

Carter's first reaction was to pressure both the FRG and Brazil directly. Carter and his national security advisor, Zbigniew Brzezinski, believed that the safeguards procedures agreed with the IAEA in 1976 were not enough. They could not stop Brazil from replicating West German enrichment and reprocessing technology *unless* replication facilities were also subjected to IAEA safeguards.<sup>109</sup> As president-elect, Carter attempted, therefore, to

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<sup>103</sup>Memorandum from Brazilian Foreign Minister Silveira to President Geisel on Jimmy Carter's 'Radical' Nuclear Stance," 31 January 1977, Azeredo da Silveira Archive, CPDOC-FGV. <https://digitalarchive.wilsoncenter.org/document/115216> (accessed November 02, 2015).

<sup>104</sup>Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, "Briefwisseling tussen de Regering van het Koninkrijk der Nederlanden en de Regering van de Federatieve Republiek Brazilië inzake de levering van verrijkt uranium aan Brazilië," Verdrag, <https://wetten.overheid.nl/BWBO003796/1978-09-01>, accessed 10 April 2019.

<sup>105</sup>AA, "Note. Text Für Eine Plutoniumlagerung Nach XIII A 5," 6 January 1978, B136 16532, BArch.

<sup>106</sup>Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, "Briefwisseling tussen de Regering van het Koninkrijk der Nederlanden en de Regering van de Federatieve Republiek Brazilië inzake de levering van verrijkt uranium aan Brazilië," Verdrag, <https://wetten.overheid.nl/BWBO003796/1978-09-01>, accessed 10 April 2019.

<sup>107</sup>AA, *Gespräch Des Herrn Bundeskanzlers*, 3 (author's own translation).

<sup>108</sup>AA, telegramm aus Washington an Bonn. Betr.: Nukleare Zusammenarbeit Mit Brasilien. Hier: Debatte Im Kongress Am 03.06.1975, 7 June 1975, B136 30554, BArch.

<sup>109</sup>AA, Telegramm aus Washington an Bonn. Betr.: Nukleare Zusammenarbeit Mit Brasilien.



press Bonn to withdraw from the Brazilian deal – or, at least, to postpone cooperation with Brasilia until the London Group negotiated an ‘international moratorium on the transfer to non-nuclear-weapon countries of nuclear enrichment and reprocessing equipment’.<sup>110</sup>

In 1977, Schmidt had already summoned his ministers of foreign affairs, the economy, and research and technology to help create a solution to the developing crisis. Their primary assumption was that the nuclear deal should be respected – *pacta sunt servanda* – and their ‘principal recommendation was to seek a multinational solution, whereby a European consortium would operate the reprocessing centre in Brazil’.<sup>111</sup> In the meantime, the KWU and other contracted firms were allowed to build reactors and other facilities in Brazil alongside them, delivering detailed blueprints of the projects. This later point generated further friction between Bonn and Washington, which criticised the action harshly. Bonn answered by defending the principle of ‘non-discrimination’ and ‘solidarity’ with the Third World in their right to develop themselves.

In Brazil, the government and opposition were in unison in criticising Washington’s behaviour, leading an unnamed Brazilian official to state that the ‘Americans, our allies, are behaving in a way worse than that of our common enemies, the Russians.’<sup>112</sup> Deputy Joaquin Coutinho, from the majority in the Brazilian parliament, declared that ‘Brazil and the FRG were free sovereign nations, not two colonies of the US.’<sup>113</sup>

Besides pressure from Washington, Bonn was also leveraged by other countries to halt the Brazilian deal – including by allies like Canada and the Netherlands and adversaries like the Soviet Union. In a summit of the London Group on 7 May 1977, Carter proposed a moratorium on the transfer of the full uranium cycle to third parties.<sup>114</sup> This addressed the case of the Indian nuclear test and that of the A-Deal with Brazil. In this summit, Canadian prime minister Pierre Trudeau highlighted that the proliferation of nuclear weapons endangered the whole world and that ‘some countries were not fulfilling their obligations’ in this area: a direct reference to West Germany and Brazil. Schmidt answered by highlighting the fact that efforts to curb proliferation should involve ‘the largest possible number of states’, including non-members of the NPT.<sup>115</sup>

With these countries, specific safeguards agreements imposed effective obligations – following the principle of solidarity and trust between suppliers and recipients. Suppliers should, furthermore, ‘accept’ the role of ‘national prestige’ (*nationalen Stolz*) when negotiating with developing countries.<sup>116</sup> The best way to push Global South countries to join the international non-proliferation regime was by talking to them directly, not by excluding them. Therefore, agreements such as those with Brazil would not be a path to proliferation, as argued by Trudeau and Carter, but a way to further ensure the effectiveness of the regime.

<sup>110</sup>AA, Telegramm Aus Washington an Bonn Aa. Betr.: Deutsch-Brasilianisches Abkommen Über Die Zusammenarbeit Bei Der Friedlichen Nutzung Der Kernenergie. (VS), 18 June 1975, B136 30554, 146, BArch (author’s own translation).

<sup>111</sup>Gray, *Commercial Liberties and Nuclear Anxieties*, 462.

<sup>112</sup>Department of State, “US Embassy Cable, Brazilian Public Reaction to US Nuclear Policies,” 19 November 1976. <https://digitalarchive.wilsoncenter.org/document/115212.pdf?v=f11b64a169a897b35db8391411217d19> (accessed April 02, 2016).

<sup>113</sup>AA, Telegramm Aus Washington an Bonn AA. Betr.: Deutsch-Brasilianisches Abkommen Über Die Zusammenarbeit Bei Der Friedlichen Nutzung Der Kernenergie, (VS), 18 June 1975, B136 30554, 146, BArch.

<sup>114</sup>AA, “Vermerk Über Die Beratungen Des Downing-Street-Gipfels Am 7. Mai 1977 Nachmittags. VS,” 18 May 1977, B136 128350, BArch.

<sup>115</sup>AA, “Vermerk Über Die Beratungen Des Downing-Street-Gipfels Am 7. Mai 1977 Nachmittags. VS,” 1977, B136 128350, BArch.

<sup>116</sup>AA, *Vermerk Über Die Beratungen Des Downing-Street-Gipfels*, 4.

This argument was grounded on Schmidt's version of *Ostpolitik*, according to which West Germany should be a bridge between North and South, as well as West and East.

Another reaction came from the USSR, which contacted the AA to express its concerns regarding the Brazilian deal. The Soviet misgivings were similar to those of the United States – namely, they were ‘not against selling power plants, but against exporting enrichment and reprocessing technologies’.<sup>117</sup> Moscow's reaction was intrinsically connected to Washington's. According to the Brazilian ambassador to Bonn, Antonio Carlos de Andrada, the USSR decided to follow Carter's new non-proliferation ‘dogma’ to improve relations between both superpowers in the context of the Strategic Arms Limitations Talks (SALT).<sup>118</sup> Unlike Washington, however, Moscow kept a low profile, so as not to be seen by ‘Third World countries’ as ‘atomic imperialists’, who wanted to ‘exclude others from economic and technological progress’, argued Ambassador Andrada, citing sources from the AA. As had been done with Washington, Bonn reassured Moscow that most of its concerns had been addressed by the 1976 safeguards agreement concluded with the IAEA and refused to include further restrictions.

## Conclusion

At the time, the 1975 nuclear agreement between Brazil and West Germany was the most ambitious technology transfer cooperation agreement ever signed between a developing and a developed country. The Schmidt administration intended to turn this agreement into a model for future North-South cooperation projects. It would bring West Germany to the centre of the emerging atomic market and establish the country as a bridge between the North and the South. Bonn's intentions to carve out an independent place in the nuclear order of the 1970s were, however, hampered by traditional partners like the United States, the United Kingdom, and the Netherlands, as well as by West Germany's own status limitations. Those limitations included restrictions to enriching uranium in its territory (imposed by the 1954 Paris Accords) and shared suspicions by the Superpowers on its peaceful intentions. In the 1980s, the implementation of the agreement slowed down due to a change of priorities in both Brazil and West Germany. Forty-five years later, just one power plant was built (Angra 2) and the jet-nozzle's commercial viability is yet to be proven.

This article has complemented existing studies by focusing on Bonn's interests in the Brazilian deal and on the obstacles it faced during the negotiation process. It highlighted three domestic motivations behind the agreement. The first was strengthening the ruling socio-liberal coalition. The deal was a means to foster political unity behind the recent, and not-so-popular, Schmidt administration, which was borne out of a political scandal that terminated his predecessor's term. Through the partnership with Brazil, Schmidt sought to ensure the support of a considerable part of the industry and bring unity behind his understanding of West Germany's role in world political-economic affairs. Second, the agreement intended to boost the West German nuclear

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<sup>117</sup>“Brazilian Embassy Cable, Brazilian Ambassador to Bonn Reports on Soviet Pressure on West Germany,” 21 March 1977, History and Public Policy Program Digital Archive, Azeredo da Silveira Archive, CPDOC-FGV, <http://digitalarchive.wilsoncenter.org/document/115218>, accessed 10 October 2019.

<sup>118</sup>“Brazilian Embassy Cable, Brazilian Ambassador to Bonn Reports on Soviet Pressure on West Germany.”

industry. It was the first step in West Germany's global expansion to promising new markets, and it would place the FRG on the same level of competitiveness of traditional suppliers, like France and the United States. Third, it was necessary to make the jet-nozzle process for enriching uranium viable. This interest appeared as an opportunity after the United Kingdom and the Netherlands denied Bonn the selling of Urenco's technology to Brazil.

The Brazilian deal was followed by a safeguards agreement with the IAEA, which West Germany considered crucial to upholding its peaceful intentions, and which was used to situate Brazil within the broader international non-proliferation regime. The A-Deal was, nonetheless, criticised by the Carter administration, which attempted to push both Bonn and Brasilia to postpone its implementation. These attempts were made through direct bilateral pressure, through international institutions (such as NATO and the London Group), and with the help of third-party countries. Particularly complicated were the negotiations for the transfer of Urenco's enriched uranium until an *ad hoc* solution to the storage of plutonium was eventually achieved. Even though the 1975 A-Deal did not manage to accomplish all of its anticipated objectives, it remains a relevant example of North-South cooperation on sensitive issues. It shows that the interests of countries are multiple and encompass both domestic and international constraints. It also illustrates the richness of the non-proliferation debate among nuclear suppliers in the 1970s, particularly concerning the clash between Carter's prohibitionist approach to nuclear exports and Schmidt's emphasis on 'supplier-recipient solidarity'.

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## Appendix

Total employment effect through construction of nuclear power plant (NPP)  
 Note: The average construction period is six years per NPP.

### Gesamter Beschäftigungs-Effekt durch Bau von KKW

(Mittlere Bauzeit 6 Jahre/KKW)

**Inland:** wie Bild 1, jedoch sind zusätzlich Brokdorf und Wylh aufgenommen

**Export:** wie Bild 1, jedoch zusätzlich

- 1) für Brasilien 2 KKW (Auftrag) ■■■■
- + 6 KKW (Planung) ●●●●
- 2) 2 KKW (Sonstiger Export)

