

H-Diplo ARTICLE REVIEW 1161

7 February 2023

Mauro Elli, “‘Nuclear Power is not just Economics’: Atomic Energy and Economic Development in the Karachi Nuclear Power Plant Project (Kanupp), 1955–1965.” *Cold War History* 22:4 (2022): 1 – 23. DOI: <https://doi.org/10.1080/14682745.2022.2059071>

<https://hdiplo.org/to/AR1161>

Editor: Diane Labrosse | Commissioning Editor: Lori Maguire | Production Editor: Christopher Ball

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Pakistan’s first nuclear power plant, which is located at the outskirts of the metropolitan city of Karachi and was constructed by the Canadian General Electric (CGE) under a turnkey contract, went critical in 1971. Famously known as the Karachi Nuclear Power Plant (KANUPP), with a gross capacity of 137 Mwe, the reactor’s performance remained poor over the 50 years of its operations, when it was shut down in 2021.¹ From its conception to its first closure in 1976 and reopening in 1980, KANUPP’s operations were directly affected by the vagaries of geopolitics and the political economy of aid, assistance, and development.

In this article Mauro Elli traces the story of a decade that started off in 1955 with the US-led Atoms for Peace program and culminated in the conclusion of an agreement under which Canada agreed to construct a nuclear power plant in Pakistan. It is not the first to shed light on the history of KANUPP but, as Elli rightly argues, his work challenges the conventional wisdom and makes important contributions to the existing literature on KANUPP.

The existing literature that discusses KANUPP primarily concerns itself with issues like institutional development and capacity building that later facilitated Pakistan’s nuclear weapons program.² Since the focus is on the direction of the weapons program, the story is only told in as much detail as it contributes to our understanding of the evolution of ideas, motivations and infrastructure relating to Pakistan’s nuclear weapons.³ Moreover, this literature does not offer much on how and why Canada agreed to help Pakistan realize its ambitions regarding nuclear energy infrastructure.

The article’s most important contribution lies in Elli’s attempt to offer a holistic account that looks at KANUPP as a product of multiple factors that were at work in Pakistan, Canada, and the world at large. Explaining Canada’s motivations, Elli argues that economic considerations only partly explain Canada’s decision to conclude the KANUPP agreement with Pakistan and that Canada’s larger concerns were shaped by Cold War considerations and Canada’s fear that Pakistan’s disappointment with the Western bloc might

¹ “Pakistan’s Oldest Nuclear Reactor KANUPP-1 Closed,” *World Nuclear Industry Status Report* (October 21, 2021) <https://www.worldnuclearreport.org/Pakistan-s-Oldest-Nuclear-Reactor-KANUPP-1.html>.

² Bhumitra Chakma, *Pakistan’s Nuclear Weapons* (London: Routledge, 2008); Hassan Abbas, *Pakistan’s Nuclear Bomb: A Story of Defiance, Deterrence and Deviance* (New Delhi: Penguin Random House, 2018).

³ Mansoor Ahmed, *Pakistan’s Pathway to the Bomb: Ambitions, Politics and Rivalry* (Washington, DC: Georgetown University Press, 2022); Feroz Hassan Khan, *Eating Grass: The Making of the Pakistani Bomb* (Stanford: Stanford University Press, 2012).

result in the country's tilt toward the USSR and China, weakening the Western position in the South Asian region (16).

On the Pakistani side, the story of KANUPP is, for Elli, the story of a particular vision of nuclear power in the early years of Cold War. He explains that the genuine belief in nuclear power as an incredible source of energy but more importantly a tool of modernization shared by two Pakistani scientists, Abdul Salam and I. H. Usmani, shaped their quest that eventually culminated in the agreement on KANUPP (8). He notes that this optimistic view of nuclear energy was not a consensus view (10), explaining that the potential benefits of nuclear power for developing states were widely contested in and outside the developing world. This contestation was obvious not only in Pakistan, between the Pakistan Atomic Energy Commission (PAEC) and the Economic Affairs Division (EAD), but also manifested in the various competing viewpoints that came out in expert analysis in the Western world (14). The author captures these tensions succinctly and describes how they affected the decision-making processes in Pakistan and Canada.

In conformity with the existing literature on the history of atomic energy in Pakistan,⁴ Elli discusses the vision of, and the important role played by Salam and Usmani, in articulating the place of nuclear power in Pakistan's economic development and modernization. He rightly highlights the social connections and considerable influence that these two scientists had in the West, primarily owing to their academic training in the United Kingdom, and how they leveraged it to overcome the considerable opposition from members of the civil bureaucracy who did not share in their optimistic view of nuclear energy (9).

Elli's account of the 1950s that predates the influential role of the Salam-Usmani duo at the PAEC is somewhat problematic. He attributes the delay in formal commencement of negotiations between Pakistan and Canada to Ottawa's preoccupation with its agonizing negotiations with India over the issue of safeguards regarding the fuel supply for the Canada-India reactor (CIR). As a result Canadian officials ignored "the Pakistani request for a draft bilateral agreement made in early 1957, to the point of being unable by the summer of 1958 to establish whether the draft had been sent to Karachi" (6). From this Elli concludes, that "while New Delhi succeeded in obtaining a regime of self-inspection for the CIR, Pakistan ... was left empty-handed for reasons that went beyond an assessment of its own performance" (6).

In *Pakistan's Pathway to the Bomb*, however, Mansoor Ahmed argues that the negotiations with Canada were stalled because the planning commission of Pakistan did not approve the initiative and instead spent the money on the Warsak Dam project. He more convincingly attributes the delays and inconclusive negotiations to the bureaucratic politics in Pakistan.⁵ Based on Elli's account of the lack of consensus on nuclear power in Pakistan in the 1960s, it appears plausible that the bureaucracy in Pakistan did not actively pursue the Canadian government on the issue in the late 1950s, thereby hampering the process of negotiation. This is also evident in Elli's detailed exposé on the exceptional efforts made by Salam and Usmani in the 1960s to leverage their international network in order to mobilize support for their vision. Financial constraints posed a huge challenge for building consensus within Pakistan's various ministries. Nowhere was this more evident as in the case of abandoning the idea of purchasing a power plant from the UK after making notable progress on exploring the possibility. Usmani's bid for aid and soft loans to fund the project did not materialize with

⁴ S. A. Hasnain, "Dr. I. H. Usmani and the Early Days of the PAEC," *The Nucleus* 42, no. 1 – 4 (2005):13-20 <http://thenucleuspak.org.pk/index.php/Nucleus/article/view/1052>; Riazuddin, "Contribution of Prof. Abdus Salam as Member of PAEC," *Nucleus* 42, no. 1 – 4 (2005): 31 – 34; Stuart W. Leslie, "Atomic Structures of nuclear nationalism in India and Pakistan," *History and Technology* 31, no. 3 (2015): 220 – 242.

⁵ Ahmed, *Pakistan's Pathway to the Bomb*, 19. It is important to note that at the time of this writing, it is highly unlikely that Elli was aware of the contents of Ahmed's book given the close publication dates of their works during the summer of 2022. I refer to Ahmed's book only to highlight an alternative reading of the negotiations on KANUPP without any judgement.

the UK. Even though Canada agreed to offer partial aid and soft loans for the project, the delays in the process affected the final shape of the agreement particularly with reference to the safeguards.

Elli discusses Canada's acceptance of Pakistan's request for financial support against the advice of the Canadian Department of Finance as evidence that there were larger issues at stake for the Canadian government. This argument gains further credence since Ottawa ignored the recommendations of the 1960 John's report—prepared for the Canadian authorities by Professor Martin W. Johns at McMaster University—and the World Bank's technical analysis, both of which were skeptical of the future of nuclear power in Pakistan. In this regard Elli notes, "these criticisms, of course, were all the more valid for a country with less solvency and less advanced infrastructure, like Pakistan in 1963" (14). Yet, the government went ahead and accepted Pakistan's requests. This in Elli's view is also confirmed by Canada's willingness to show flexibility on the issue of safeguards. Elli offers a detailed account of the negotiations over safeguards and concludes that the Canadian side eventually conceded to Pakistan's position instead of scrapping the agreement, only for the International Atomic Energy Agency (IAEA) to make the safeguards imperative for the deal to go through.

To make a conclusive claim about Canada's Cold War considerations as the primary determinant in this case three areas require more attention.

The first is the role and influence of the Atomic Energy of Canada Limited (AECL). Elli acknowledges that the AECL agreed to Usmani's request (made on behalf of the PAEC) to conduct a preliminary feasibility study on the power plant without insisting on a formal request from the Government of Pakistan. This is intriguing, given that in the grand scheme of Cold War politics it was not the Salam-Usmani duo but the state of Pakistan that mattered. This points to the AECL's preference for conducting nuclear business beyond the realm of geopolitics. This is also evident on another occasion where Elli notes, "the AECL strongly emphasized the importance of exporting without delay to maintain the balance of the Canadian nuclear industry..." (14).

Second, referring to the discussions in the 1963, Elli argues that the slow decision-making process in Canada provided the Pakistani leadership enough time to develop an effective strategy "to leverage political concerns to their advantage" (15). However, he does not say much about the domestic political situation in Canada during that year. In 1963, Lester B. Pearson, who had strong ideas about aid and assistance to the developing world, became prime minister.⁶ Pearson's coming into power might also have affected the Canadian perspective on the nuclear cooperation with Pakistan.

Finally, it is not clear what motives made Canada more concerned about the Cold War imbalance in comparison to the US and the UK, the two main protagonists in the Western bloc. The question then is whether Canada was more attentive to Cold War considerations than the US and the UK and, if so, why.

The thrust of Elli's overall argument projects Pakistan as a victim of its alliance with the Western bloc in the Cold War divide. Elli writes, "... it was already apparent that in exchange for support for the civil atomic program, Pakistan would have to accept a much heavier burden of control than that granted to India. Crucially, this difference in conditions was not only a reflection of perceived weaknesses in the Pakistani state, but also of the lack of leverage that Pakistan held as a loyal member of the Western bloc, in contrast to India's non-aligned stance" (7). This viewpoint undermines the significance of the precious time that Pakistan had lost due to its internal divisions and mishandling of important issues like safeguards. In contrast to Elli's

⁶ John English, *The Worldly Years: The Life of Lester Pearson 1949 – 1972* (Toronto: Knopf Canada, 1992); Kevin Brushett, "Partners in Development? Robert McNamara, Lester Pearson, and the Commission on International Development, 1967 – 73," *Diplomacy and Statecraft* 26:1 (2015): 84 – 102, DOI: <https://doi.org/10.1080/09592296.2015.999626>.

argument, Ahmed attributes the responsibility for stricter safeguards to the bureaucratic inertia and the mishandling of the discussion by the Pakistan Economic Affairs division.⁷

Elli's reading of the negotiations over safeguards from the Pakistani side also contradicts Ahmed's reporting on the same issue. While Ahmed hints at the convergence between Pakistan's Foreign Office and the PAEC under Usmani and possible disagreement between Usmani and the EAD on the issue of safeguards,⁸ Elli claims that there was an "unprecedented convergence between Usmani and the economic authorities against the position taken by the Foreign Ministry..." (18).

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These issues notwithstanding, Elli has done a good job in telling the story of KANUPP's conception and inception in all its complexities, bringing out the contestations shaped by competing perceptions of development, modernity, aid, and assistance etc., at the domestic political and organizational levels both in Pakistan and Canada as well as juxtaposing these developments against the larger international geopolitical developments. In doing so, Elli has used evidence primarily drawn from Canadian, British, and World Bank archival documents and primary sources obtained from the PAEC. This article in all its depth and breadth will be useful to scholars interested in the history of nuclear power and KANUPP but also in the politics of aid and assistance during the Cold War, diplomatic history, bargaining in international relations, and the role of individuals in the articulation and realization of projects of international significance.

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⁷ Ahmed, *Pakistan's Pathway to the Bomb*, 25.

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