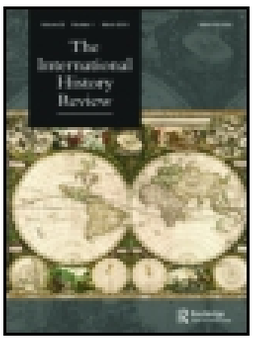

The International History Review

ISSN: 0707-5332 (Print) 1949-6540 (Online) Journal homepage: http://www.tandfonline.com/loi/rinh20

# Signed, Sealed but Never Delivered: Why Israel did not Receive Nixon's Promised Nuclear Power Plants

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**To cite this article:** Or Rabinowitz (2018): Signed, Sealed but Never Delivered: Why Israel did not Receive Nixon's Promised Nuclear Power Plants, The International History Review, DOI: 10.1080/07075332.2018.1436581

**To link to this article:** https://doi.org/10.1080/07075332.2018.1436581

THE INTERNATIONAL HISTORY REVIEW, 2018
https://doi.org/10.1080/07075332.2018.1436581

Routledge
Taylor & Francis Group



# Signed, Sealed but Never Delivered: Why Israel did not Receive Nixon's Promised Nuclear Power Plants

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**ABSTRACT**

In the early 1970s, Israel was on the cusp of launching an ambitious nuclear power programme. It had technical nuclear experience and a pressing need to limit its dependency on imported oil and coal, and interest in nuclear powered water desalination. This nuclear vision enjoyed the support of the Nixon administration, which proposed in June 1974 to export reactors to both Israel and Egypt. But by the end of the decade, under the Carter administration, the plan was all but gone. What was the original US and Israeli rationale behind the reactor deal? How did this initiative relate to other developments such as the Indian nuclear explosion, the Arab oil embargo and the peace talks with Egypt? How important was the Carter administration's policy shift in determining the outcome of the initiative? This paper will address these questions by analysing newly declassified documents from several US and Israeli archives.[1]

**KEYWORDS**

Israel; Egypt; nuclear; reactor; proliferation

## Introduction

For most nuclear weapons states, nuclear energy and nuclear power plants came hand in hand with the development of nuclear technology.[2] Israel and North Korea, two countries that are not often listed together, are the only two nuclear weapon states that as of 2017 have not developed a nuclear energy infrastructure. Markedly, North Korea has a lead on Israel in this respect, as it had started the construction of a nuclear power plant in 2010, though as of 2017 has not completed it.[3]

Israel is an arid country whose territory largely consists of desert and semi-desert climatic areas, lacking in water and, until the recent discovery in 1999 of off-shore natural gas deposits, lacking also in indigenous carbon-based energy sources. Despite exhibiting interest in developing nuclear power as early as the 1950s, and possessing some technological nuclear competence and experience, Israel did not manage to develop nuclear power infrastructure in its first 70 years. An offshoot of the plan, the leadership's dream of 'making the Negev bloom' using nuclear powered desalinated water also remained on paper. The closest Israel ever got to purchasing nuclear power reactors was during the Nixon-Ford years, when agreements regarding the export of nuclear power plants were signed, only to be later abandoned. The aim of this study is to explore the rise and fall of Israel's civilian nuclear vision in the 1970s. The study examines the original US and Israeli rationale behind the reactor deal, and the conflicting dynamics which shaped it during

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the Nixon, Ford and Carter administrations. It concludes by examining the role of Carter's nuclear policy shift in determining the outcome of the initiative.

The existing academic literature on Israel's nuclear power aspirations is scant. Shimon Yiftah, a leading Israeli nuclear scientist, has written about nuclear energy in the Middle East from an expert's perspective, publishing his books in the 1970s without the privilege of hindsight, advocating massive deployment of nuclear power plants in Israel.[4] Paul D. Wolfowitz, who would later serve as US Deputy Secretary of Defense (2001–2005), wrote his PhD dissertation on this topic in 1972. Wolfowitz argued that the 'belief that nuclear desalting of sea water is about to bring untold blessings to the parched and troubled Middle East' was false, contending that '…the benefits from nuclear desalting have been vastly exaggerated.'[5] Studies on the development of Israel's nuclear weapons programme do not treat Israel's nuclear energy bid.[6] One exception is Zach Levey's study which reviews the 1960s Johnson-Eshkol talks on the nuclear desalination project.[7]

The Israeli case is also relevant to the contemporary debate in nuclear proliferation literature, where a new wave of scholarly work focuses on the importance of nuclear cooperation agreements and the role of civilian nuclear supplies in nuclear proliferation dynamics. One strand of research, led by Fuhrmann and Kroenig, attaches great significance to nuclear exports and civilian nuclear agreements in promoting nuclear weapons proliferation.[8] An opposing camp, led by Braut-Hegghammer and Hymans, maintains that the role of nuclear exports in promoting proliferation is limited.[9]

Israel's interest in nuclear technology predates the establishment of the state itself.[10] Immediately following its declaration of independence, the leadership set about taking the necessary steps to establish a national nuclear infrastructure.[11] Perhaps most significantly, by the end of the 1950s, two nuclear research reactors were under construction, an American built and safeguarded reactor at Soreq, and a French built, and unsafeguarded, reactor in Dimona.[12]

In the late 1950s and the early 1960s, Israeli officials mentioned both publicly and privately their intention to establish nuclear power plants in Israel. Potential nuclear exporters, like the British, were following this with great interest.[13] The most famous private conversation in this context took place in New York, on 30 May 1961, when Israeli Prime Minister David Ben Gurion met President John F. Kennedy to discuss Dimona's construction.[14]

Ben Gurion told Kennedy that one of the greatest problems Israel faces is the 'serious shortage of fresh water.' He stressed that nuclear powered water desalination is '[T]he only solution to this continuing shortage', adding that 'Israel hopes that atomic power, which is now expensive, will become much cheaper and will make possible the economic desalinization of sea water.'[15] Ben-Gurion echoed this in talks with his British counterpart Harold Macmillan the following month.[16]

In these talks, the Dimona reactor itself was not presented by Ben-Gurion as a power reactor meant to produce electricity or desalinate water. Rather, Ben-Gurion gave the impression to his interlocutors that Israel would use it to gain nuclear expertise, which would be used at some unspecified point in the establishment of Israel's future civilian nuclear infrastructure. To a degree, Ben-Gurion was using genuine Israeli interest in nuclear power to mask intentions to use Dimona to develop nuclear weapons.

President Lyndon B. Johnson, a Texan with deep appreciation of the importance of fresh water to human prosperity, was passionate about the possibility of 'desalting sea water' using nuclear energy and making deserts around the world bloom.[17] He repeatedly expressed his 'deep personal interest in desalting' and proposed to 'share US knowledge and technology with other countries.'[18] In 1965, parallel to on-going talks with Israel, cooperation on nuclear desalting was progressing with other countries.[19] Mexico and the US explored the feasibility of a 'large-scale dual purpose plant' at the northern tip of the Gulf of California, and preliminary contact on the subject was made with Egypt, Tunisia, Greece, Italy and Spain.[20]

Johnson became involved in the Israeli desalination project in 1964, when he agreed with Israeli Prime Minister Levi Eshkol to launch a series of joint studies on the feasibility of a dual purpose power and desalination plant, which was linked to his 'Water for Peace' initiative.[21] A second plan, dubbed 'the Eisenhower-Strauss plan', was launched after the Six Day War in June 1967; it proposed the construction of three nuclear desalting plants in the region, with the aim of promoting peace and stability. In Johnson's last year in office, this proposal devolved into a proposal to contribute 40 million dollars to the construction of a desalting plant in Israel.[22]

Though Johnson and Eshkol did not manage to reach any tangible progress, it seems that the issue had deep sentimental value to both. When Johnson left office, in January 1969, Eshkol sent him a farewell letter of sorts. In the letter, Eshkol included 'a special word of gratitude' for two 'crucial decisions', both tied to Israel's nuclear path. The first was for Johnson's 'decision on the Phantom's', a reference for the President's choice to authorize the sale of Phantom jets to Israel without demanding a linkage to Israel's accession to the NPT.[23] The second was for Johnson's decision to recommend to Congress 'the construction of a desalting plant in Israel.'[24]

The nuclear desalination plans were abandoned by the Nixon administration in November 1969, following Prime Minister Golda Meir's meeting with Nixon on 26 September 1969.[25] The official reason was cited in November 1969 as 'budgetary constraints'.[26] Natan Arad, an Israeli official involved in the desalting talks, explained in 1977 that the Johnson-era assumption was that nuclear power could 'produce unlimited amount of water', lamenting that 'we, together with the Americans, got caught in this illusion.'[27]

Separately from the nuclear desalination path, Israeli planners were moving ahead with dedicating sites to future nuclear power plants (NPP's). A 1968 assessment foresaw that 'by the year 2000…up to 30% of the national grid's production capability may be nuclear, (approximately 2,500 megawatt electricity) … and therefore it is clear that we are on the verge of a nuclear age in Israel as well, and the question is not "if" but rather of "when"…'[28]

## The attempt to maintain a 'dominant trading position'

President Richard Nixon's declaration of intent to export nuclear reactors to Israel and Egypt was made public during his historic June 1974 visit to the Middle East. On 14 June, Nixon and Egyptian President Anwar Sadat signed a joint statement which included a reference to nuclear exports; the document declared that pending the conclusion of an agreed safeguards agreement, 'the United States is prepared to sell nuclear reactors and fuel to Egypt.'[29]

The Cairo declaration, which would soon be followed with a similar statement in Israel, was the natural continuation of an existing policy. National Security Decision Memorandum (NSDM) 235 of 4 October 1973, stipulated that the US would be ever so slightly more careful with its nuclear agreements. It would review 'any future requests for the supply of large quantities of highly enriched uranium abroad on a case-by-case bases without an a priori presumption of supply', and would 'require that a recipient has acceptable physical security measures in effect.'[30] Israel and Egypt were both not members of the NPT in 1974, but this did not represent a policy problem, since the policy stipulated that the US would only 'weigh the position of the recipient with respect to the Nuclear Non-Proliferation Treaty in reviewing and deciding on requests for supply', but not demand it.[31]

## Nuclear supplies reliability and the Israel–Egypt deal

Since the launch of Eisenhower's 'Atoms for Peace' plan in 1953, official US policy was to establish primacy in nuclear exports.[32] In the following two decades, the US was 'the sole supplier of enriched uranium for the world's nuclear power programs.'[33] But in the early 1970s, US position as a leading nuclear supplier was eroding; a 'bottle-neck' in US uranium enrichment capabilities and a backlog of orders meant that US facilities could not take on new enrichment contracts after June 1974,[34] opening the door for competitors.

For the Nixon administration this presented a problem, since nuclear supplies had a 'dual-use' of sorts: both commercial and political. According to Roy Atherton, one of Kissinger's top aides, US 'monopoly and the benign use we made of it contributed to our unparalleled influence over international nuclear policies.'[35] Linking this to the Israeli-Egyptian deal, Atherton explained that the US 'dominant trading position' is the key factor in the implementation of the deal.[36] The so-called 'benign use' of cheap fuel exports was not motivated by benevolent self-sacrifice alone, since 'a major US objective was to create a world market for US nuclear equipment and services.'[37] Nixon chose blunter words in defending subsidized fuel exports: 'over the years, the potential of nuclear energy will bring us profit enough' he told a bipartisan leadership meeting in late June 1974.[38]

But to maintain this 'unparalleled influence', the US had to remain a reliable nuclear supplier, and faced an urgent need to 'correct the growing perception' that it was an 'uncertain and unreliable' provider.[39] Winston Lord, Kissinger's Director of Policy Planning, articulated the following concern: should the US fail to ascertain its reliability – its 'non-proliferation objectives' would be damaged, 'due to loss of leverage and inability to impose adequate safeguards.'[40]

A further motivation to quickly tackle the bottle-neck in uranium enrichment services was the Arab oil embargo. In late 1974 the price of an oil barrel was roughly 10$, about four times its price compared with mid-1973.[41] The growing global interest in nuclear energy, and the 'quickening of the pace of nuclear growth' created 'an added significance' to tackle the credibility deficit.[42]

The policy on the Egypt-Israel reactor deal was shaped against this backdrop. An ad-hoc committee was established in April 1974 to assess it, and its report was submitted to Kissinger on 7 June 1974.[43] In the middle of the committee's proceedings, India conducted its first nuclear test, which it dubbed a 'Peaceful Nuclear Explosion' (PNE). The committee did not see the Indian PNE as a reason to reject the sale, as long as it included 'stringent safeguards mechanisms.'[44]

The conclusions were accepted, and it was clear to the administration that special safeguards would be required from both countries. Nixon's brief for his trip to Egypt summarized the approach as follows: 'Our preliminary inclination is to recommend going ahead with these sales on the basis of IAEA safeguards and a bilateral agreement on cooperation with each country containing special conditions regarding plutonium processing and disposal.'[45]

The ad-hoc committee also argued that the special conditions would reaffirm American 'desire to guard against the further spread of nuclear weapons, while continuing to support peaceful applications of nuclear power' and stressed that the US could set 'more careful standards' compared with 'non-U.S. suppliers to the Middle East.'[46] Both Nixon and Kissinger strongly agreed with this logic. Kissinger told the bipartisan leadership meeting that 'If we hadn't done it, both Canada and Europe would sell the reactors under probably weaker safeguards… We are strongly opposed to the spread of nuclear weapons but this does not raise those dangers.'[47] To this Nixon added: 'The peaceful use of nuclear energy is a fact. It is better for us to do it, with safeguards, than for someone else.'[48]

An explicit condition regarding NPT accession or the acceptance of full-scope safeguards was rejected by the committee. It recommended that both clients would guarantee that 'each would not be the first to introduce nuclear weapons into the Middle East.'[49] If this term sounds familiar, it is because it is a reflection of Israel's famous statement on nuclear ambiguity.[50]

A further condition to be attached to the deal was an agreement that 'all future nuclear facilities and materials from any source would be placed under IAEA safeguards' (emphasis added), a condition which was meant to create an extension to the NPT.[51] It was assumed that while this would leave Dimona 'untouched', it would essentially represent a functional equivalent to an NPT obligation covering the bulk of each nation's nuclear power programme, catching in its net all future facilities: 'If Israel accepts this "Partial NPT" agreement, it is likely that Egypt will follow', and this could lead the two to join the NPT down the road.[52] Lord explained that 'these agreements can, in turn create a climate for NPT ratification by Israel and Egypt in the future… used to build a base of support for a Middle East Nuclear free Zone.'[53]

In opposition to the administration's high hopes tied to the agreements, Congress was not thrilled with this initiative. Several proposals were circulated to 'restrict the President's latitude in concluding civil nuclear sharing agreements with Israel and Egypt.'[54] The State Department's assessment at the summer of 1974 was that 'the Israeli agreement would pass but the Egyptian agreement would be a very close call.'[55]

## Israel's nuclear vision in the early 1970s

Nixon's June visit came at a time when Israel was making its own early steps in the field of nuclear energy. In May 1973 the government approved initial preparations towards planning and publishing a public tender for the construction of Israel's first NPP.[56] Nuclear momentum was picking up, and in February 1974 Israel's Electric Corporation (IEC), a government owned utility, publicly announced its intention to establish and operate an NPP, hosting hopeful representatives of American and European nuclear companies.[57] Nuclear optimism was such that Yiftah wondered 'is it worthwhile and reasonable to build

conventional power reactors and further aggravate the dual problem of costly and hard to come by oil?'[58]

The IEC planned to construct a 600-MW plant on the Israeli coast, which would start operating in 1981, with the estimated cost assessed at approximately '400-500 million dollars.'[59] However, despite the flurry of activity, an official governmental policy was not yet in place. Minister of trade and commerce, Haim Bar-Lev, told the Knesset in May 1974 that 'the government will have to discuss and decide whether to adopt the plans.'[60]

Privately, Israeli AEC officials told American interlocutors that they anticipated bringing their first reactor online in 1982, 'with an additional reactor each 12-18 months to year 2000', leading their guests to conclude that 'Israel's projections clearly rely very heavily on nuclear reactors for power needs.'[61] Fast breeder reactors were also considered by Israeli scientists: 'If the development of fast reactors should justify it, it is possible that two of the reactors in the late 1980s would be fast reactors.'[62]

By mid-1976, these initial assessments increased both in terms of costs and in capacity. The updated nuclear vision foresaw the construction of a 900-MW plant, with the expected cost of approximately '715 million US dollars' which would start operating around 1985–1986.[63] This plant was expected to 'supply about 22% of the general electricity demand in Israel' in the first year of operation.[64] Yiftah maintained that Israel was 'on the verge of a nuclear revolution in energy production and on the cusp of establishing a large nuclear industry.'[65]

## Israeli shock at Nixon's Cairo declaration

The Israelis were not informed in advance of Nixon's Cairo declaration, and this caused a small scale bilateral crisis. Newly sworn-in Israeli Prime Minister, Yitzhak Rabin, summoned Kenneth B. Keating, US ambassador to Israel, to discuss the issue. A disappointed Rabin told Keating of his surprise, emphasizing that 'nuclear energy cooperation was a very sensitive matter', adding that 'even the Russians had declined to help the Egyptians build a nuclear power plant.'[66] When the matching Israeli agreement was brought up by Keating, Rabin 'quickly reacted', stressing that 'Israel would undoubtedly desire an agreement' of its own.[67]

Defence Minister Shimon Peres told Keating in a later meeting that following their surprise, the Israelis 'sense some subtle change in the US policy towards Israel.'[68] American diplomats who met with Israeli AEC officials reported that 'the Israelis clearly distrust any 'symmetry' of requirements placed upon both Egypt and Israel, for fear that the Egyptians would violate the agreement.'[69]

Visibly, the Cairo declaration received more public attention and criticism than news of the promised Israeli reactors. A report from the US embassy in Tel-Aviv from the day of the Cairo declaration noted that news coverage of the event 'indicated Israeli concern over the possibility of Egypt developing nuclear weapons.'[70] Moshe Dayan, Israel's former Defence minister and then an influential member of Knesset, labelled the deal a 'potential historical fatal error'.[71] The government had to react. Rabin publicly announced that he had asked Shelheveth Freier, chairman of the Israeli AEC, and Israel Dostrovsky, President of the Weizmann institute who headed the Israeli AEC from 1965 to 1971, to examine the implications of the US –Egyptian nuclear power agreement for Israel's security.[72]

The Israeli concerns were also raised with Nixon and Kissinger upon the start of the state visit on June 16, 1974. Rabin told Nixon that allowing the Egyptians to gain nuclear expertise was dangerous since, in his words, they would be 'more capable to move into the other side of the use of nuclear energy.'[73] Rabin described the deal as having the potential to create a 'real danger', leading the Egyptians to develop 'dangerous weapons… meant for Israel.'[74] Nixon's response to Rabin is the only known documented reference Nixon made regarding Israel's nuclear capabilities, though it is markedly indirect: 'Well, Israel will be doing all right too. We know how well off you are in this respect. Just don't let's kid each other' he told Rabin.[75]

Touching on the possible Egyptian-Indian connection, both Nixon and Kissinger explained that India would probably not export nuclear technology and knowledge to Egypt, since Egypt might export it in turn to its ally – Pakistan. To conclude the point Nixon stated: 'Of course, this proliferation in nuclear weapons is something we have all got to worry about. If India, with their incompetence and laziness could get it, my goodness!…'[76]

## From direct criticism to indirect stalling

Rabin and his ministers soon realized that Israel's dramatic public reaction to the Egyptian deal was counterproductive for Israel: it drew global attention to Israel's unsafeguarded nuclear facility at Dimona and its nuclear programme.[77] To remove the subject from the headlines, the Israeli leadership decided not to pursue the subject further in a public manner.[78]

Concurrently, Freier and Dostrovsky reported that they were not concerned with the deal's implications, both sharing the opinion that the '…US/Egyptian nuclear reactor agreement offers no unacceptable risk to Israel', and that 'procurement of nuclear power reactors by Egypt is inevitable in any event, and supply by USA with rigid safeguards is preferable to their supply by other countries such as France or USSR.'[79]

Due to the 'bottle-neck' in enrichment services, both Israel and Egypt were quick to sign provisional contracts on the supply of nuclear fuel for peaceful purposes, pending the conclusion of the reactor deal.[80] But progress stopped here, despite this scientists 'green-light'. Instead of publicly attacking the Egyptian deal, Israel now adopted stalling tactics. Since the two agreements were joined at the hip, as '[C]ongressional reaction has tended to tie the US proposals on cooperation with Egypt and Israel together'[81], an Israeli delay meant an Egyptian delay as well.

In July 1974, the proposed US 'safeguards and security controls' were communicated to Israel.[82] The Egyptians, shortly later, expressed interest in signing the agreement in August 1974, and the Americans asked the Israelis if they 'could expedite consideration of proposed text'[83] but no reply was forthcoming.

In July 1974, Israeli Foreign Minister Yigal Allon asked Kissinger as a 'personal favour' to delay the Egyptian deal for a few months, not explaining why this time frame was chosen.[84] In December 1974 and now under President Ford, the issue was raised again, and this time Allon stressed that Israel had no objection to the deal.[85] According to the Israeli protocol of the meeting, Allon told Kissinger that 'one should not expect Israel to give its blessing to Egypt getting a reactor, though it [Israel] may not publicly object to it as long as adequate safeguards are applied.'[86] Allon proposed separating the two tracks: 'Maybe we can accept it in principle but we can take it later. And we won't raise hell, we won't make trouble. … .'[87]

## The 're-evaluation period' and the conclusion of the deals

Israeli refusal to withdraw from parts of Sinai in 1975 led to a deterioration in USA–Israeli relations, culminating in the 're-evaluation period', which lasted from March till September 1975.[88] US relations with Egypt, in the meanwhile, had dramatically improved, leading some State Department officials to warn that Sadat's strategic swing towards Washington could be dangerously 'counterproductive', creating impossible expectations which would likely be shattered.[89] Sadat was invited to Washington in early November 1975 and the reactor deal played a central role in the visit.[90] Still, lack of progress in the Israeli side meant that there was no progress on the Egyptian side as well.

In early June 1976, the prospects of concluding the reactor deal were bleak. The cut-off date for a possible favourable congressional action was fast approaching; American legislation stipulated that both agreements, if concluded, had to lie before congress for 60 days before they were voted on, and time before the November 1976 elections was running out.

In January 1976 the Israeli government confirmed the nomination of Uzi Eilam as the new General-Director of the IAEC. According to Eilam's account, upon entering office he realized that there was no clear governmental policy in place on NPP's.[91] Upon his request, a governmental committee was adjourned to discuss in principle whether Israel should move ahead – or not. According to Eilam, the committee consisted of three ministers: Foreign Minister Yigal Allon, Finance Minister Yehoshua Rabinovitz and minister of trade and industry Haim Bar-Lev, chaired by Prime Minister Rabin. In Eilam's recollection, Allon and Rabinovitz opposed the initiative; Allon feared accepting American reactors would eventually force Israel to join the NPT, Rabinovitz objected on financial grounds. Bar-Lev supported the initiative and thought it made financial and strategic sense. At the end of the meeting, Prime Minister Rabin was convinced to move ahead and 'green light' the establishment of the power plants.[92]

Though further research is required to corroborate the details of Eilam's account, existing documents lend support the notion that Rabin became a supporter of the idea. In June 1980, then a member of Parliament and no longer Prime Minister, Rabin described his nuclear power vision in the following words: 'I have no doubt that Israel, which is currently completely dependent on oil imports, will have to continue looking for new paths to produce electricity from nuclear energy. … This project is crucial, in my opinion, and Israel will have to look for ways to develop new sources of energy… in a single central site in the Negev.'[93]

In June 1976 an Israeli team 'arrived in Washington on very short notice' to discuss the nuclear agreement.[94] Talks progressed 'smoothly and quickly.'[95] The Israeli press reported an official government decision, taken in mid-July, authorizing Simcha Dinitz, the Israeli ambassador to Washington, 'to initial the agreement with the USG regarding the purchase of nuclear power plants for civilian use.'[96] This move was described by members of the Knesset as a decision to '…to pursue in principle, and in full throttle, the establishment of nuclear power plants.'[97]

The two conditional agreements, with Israel and with Egypt, were swiftly concluded, and were initialled in Washington on 5 August 1976.[98] In a memo to President Ford, National Security Advisor Brent Scowcroft noted that 'Israel accepts the package concept and supports the Egyptian agreement', concluding that 'The agreements contain

unprecedented restrictions and controls and present no real proliferation risks.'[99] The key restrictions included acceptance of several safeguard measures on material and equipment, extra-territorial reprocessing and storing of plutonium, a 20% cap on the enrichment level of the uranium fuel, and a condition prohibiting the use of US material and equipment for 'any nuclear explosive device.'[100] The text of the agreements contained no traces of the Nixon-era 'no first introduction' guarantee, or any mention of paving the way to NPT accession and the creation of a Nuclear Free Zone.

Available archival documents do not reveal the mechanism which drove Israel to complete the August 1976 deal. Rabin's decision to revive and conclude the agreement was likely, at least partially, motivated by the realization that time was running out for the conclusion of such a deal which did not entail opening Dimona up for inspection. The global non-proliferation regime was changing. The establishment in 1975 of the Nuclear Suppliers Group (NSG) and new US non-proliferation legislation, the Glenn and Symington amendments to the Foreign Assistance Act, all pointed towards the emergence of a new requirement for buying nuclear technology – the eventual acceptance of safeguards on all facilities.

A further consideration which might have influenced Rabin's policy was Israel's revived interest in constructing the two seas canal, a project which envisaged a saltwater conduit from the Mediterranean Sea to the Dead Sea. The supporters of the initiative believed that such a conduit could be instrumental for the construction of NPPs in the heart of the Israeli Negev, by supplying salt water to cool the reactors. Inland power plants were considered much cheaper to protect, compared with the coastal plants.[101]

The Israelis were highly concerned with possible attacks against their planned power plants. In discussions held in May 1974, Israeli officials told their US counterparts that Israel was seeking assistance related to reactor designs which could 'protect against acts of war.'[102] Allon mentioned it to Kissinger in 1974: '…we would have to invest so much in defense of this reactor from air attack etc [sic] that it will cost so much that some will say 'Why do we need it'?[103]

In 1977 an Israeli AEC official told his American colleagues that the Israelis were considering: 'either burying the entire plant or putting a single hemisphere over it.'[104] Such options were clearly very costly, with one document stating an expert's assessment that 'the costs of protection will total around 100 million USD (1976) for a coastal reactor.'[105] Inland reactors, located in the remote parts of the sparsely populated Israeli Negev Desert, were seen as safer compared with coastal reactors; they were easier and cheaper to defend and presented less of a danger to the general population in case of an accident. It was assessed that hardening the inland reactor would cost 80 million dollars less than the coastal reactor.[106] Later, tentative plans from 1979 proposed the establishment of a cluster of reactors at the Dimona site.[107]

## Missing the nuclear exports train

By September 1976 it was clear to the Ford administration, then in its final days in office, that Congressional approval for these nuclear agreements was not 'probable.'[108] Both deals, but especially the Israeli deal, were on a collision course with the new nuclear policy the administration was forming. The new policy would demand from recipients NPT membership or 'willingness to submit all … nuclear facilities to safeguards.'[109] Scowcroft

warned Ford of the 'awkwardness' of submitting the agreements to Congress, due to the 'inconsistencies' they reflected with regard to the proposed policy, and the 'exceptions' they constitute.[110]

In his Nuclear Policy statement from 28 October 1976, Ford touted the agreements with Israel and Egypt as containing 'the strictest reprocessing provisions and other nuclear controls ever included in the 20-year history of our nuclear cooperation program.' [111] But despite Kissinger's recommendation to submit the agreements to Congress 'mainly because of our commitments to the Egyptians and the Israelis that we would do so'[112], Ford did not comply. The Egyptians were told that the new administration would 'promptly approve them and submit them to Congress.'[113] Israel was informed that should Ford win the election, a policy exception would be made on its behalf, and there would be no need to 'renegotiate or do anything with regard to the agreement we initialled.'[114]

President Ford lost the 1976 elections and the new elected President, Jimmy Carter, had no reason to make an accommodation on Israel's behalf. A few days after the elections, a 13 member delegation of Senators tasked with assessing Israel's nuclear energy needs arrived in Israel.[115] They met in Jerusalem with Rabin and Eilam, and Senator John Glenn, an ardent advocate for non-proliferation, levelled some hardhitting questions at Rabin on Israel's nuclear capabilities, refusal to join the NPT, and plutonium reprocessing practices.[116]

The Israelis, while fully supporting the American attempt to prevent any further proliferation in the Middle East, thought that American focus on controlling plutonium reprocessing technology overlooked the emerging threat posed by uranium centrifuge enrichment. Rabin told Glenn: 'Our people say – I am not an expert – that in the coming future, five, 10 years, the question of centrifugal enrichment might be a practical solution even not to big coutries alone. This can be hidden without any capability to find out, by any way, for any form of supervision.'[117]

Rabin also flatly denied Israel's status as a 'nuclear country', while introducing a modification to Israel's 'no first introduction' guarantee: 'There are [nuclear] weapons in the area I believe, Russian and American in the Mediterranean… .Therefore when we say we will not be the first to introduce, we mean in the Arab-Israel conflict.' To this he added 'We are not a nuclear country. I don't know what is the meaning of reprocessing. I don't know the technical terms.'[118]

Since Carter was an avid supporter of the NPT, the Israeli leadership correctly suspected that under Carter, any future reactor deal would be conditioned on Israel's acceptance of comprehensive safeguards. 'We usually have better access to the Democrats because of the many Jews in the party, but with Carter we have no access…' warned one Israeli diplomat prior the elections.[119]

Upon entering office, Carter was not keen on following the Nixon-Ford example of tacitly accepting Israel's nuclear capabilities. *Newsweek* reported on an Israeli assessment that the major struggle with the new Administration 'will not involve occupied Arab lands, but a demand that it sign the nuclear-non-proliferation treaty.'[120] According to Dinitz, Carter was 'not aware' of the 'understanding… reached during Nixon's term' on Israel's nuclear status.[121] Dinitz recalled that upon taking office, Carter 'started the whole story from the beginning. We had to ask Doctor Kissinger, who was not the Secretary of State at that time, to go to Carter and explain to him the nature of the understanding with Nixon on the nuclear issue.'[122]

The reactor deals were shelved until the administration was to announce its nuclear non-proliferation policy, and in the meantime, the peace talks between Israel and Egypt were prioritized. In late March 1977 the Israelis were asked to comment on several points Carter was planning to make in his coming non-proliferation policy speech; it was made clear that Carter was planning to completely reform US non-proliferation and nuclear exports policy.[123] The Israeli Foreign Ministry submitted a generic response according to which Israel 'strongly supports in principle the strengthening of the non-proliferation regime in the world.'[124]

For some in Israel, it was already becoming clear that the promised US reactors were a 'fata morgana'. Dostrovsky gave the reactors a virtual eulogy at a symposium held in March 1977. He explained that 'the fear of spreading nuclear weapons as a result of spreading nuclear energy is so tangible that it has caused the Americans to have second and third thoughts on spreading power reactors around the world…In fact, the Americans today regret the entire Eisenhower plan on peaceful nuclear energy…They regret it to the extent of being willing to delay all plans to spread nuclear power reactors, including the one promised to Israel. And I think there is a pretty big chance that we will not get the reactor as a matter of principle. Not because they are particularly afraid of us [proliferating].'[125]

Carter's non-proliferation message to Congress from 27 April 1977 outlined the aforementioned pre-requisite of safeguards on all facilities.[126] This was later adopted into the 1978 Nuclear Non Proliferation Act (NNPA).[127] It was clear to Israel that the deployment schedule would sustain a delay, and some officials proposed approaching France, Canada or Japan, as alternative suppliers, or alternatively, indigenous construction was proposed.[128]

In 1979, Cairo expressed willingness to accept the new provisions, while the Israelis were not interested in the modified deal.[129] Carter's Secretary of State, Cyrus Vance, assessed in April 1979 that 'the Israelis remain interested in a nuclear cooperation agreement' and that they might seek a presidential NNPA waiver. Significantly, Vance recommended not to grant such waiver due to the 'adverse impact on our entire non-proliferation policy.'[130] President Carter 'approved moving forward quickly,'[131] a waiver was not offered, and the two amended deals were proposed to Egypt and Israel. In August 1979, the Israeli press reported that the original plans to construct Israel's first NPP were cancelled, due to Carter's new policy, which prevented Israel from receiving US funding as long as it was not willing to accept inspections in Dimona.[132]

Upon leaving office, Gerald Smith, Carter's special representative for non-proliferation matters, sharply criticized the so-called Israeli 'bad example' on nuclear matters, comparing it to Pakistan: 'While we have urged our allies to set a good example by limiting their power programme's use of plutonium, we have set a bad example by acquiescing in Israel's generation and use of plutonium for weapons. While we, by law, cut off aid to Pakistan because it is constructing facilities to produce nuclear weapons grade material, a large percentage of American aid goes to Israel. The international community is well aware of this inconsistency and discrimination.'[133]

## Concluding remarks

The life cycle of the Nixon/Ford initiative to export NPP's to Israel and Egypt exemplifies the internal tension between non-proliferation goals on the one hand, and larger policy

goals, which encompass commercial interests and foreign relations, on the other. It also demonstrates how throughout the 1970s, the constantly shifting grounds of the non-proliferation regime caused a normative shift in the way states were expected to behave in the nuclear realm in order to qualify as eligible nuclear clients. While commercial motivations pulled towards a US attempt to dominate the market and conclude as many agreements as possible, the non-proliferation rationale pulled towards refusing nuclear exports to those who did not accept the global regime.

The Nixon/Ford administration originally adhered to a clear rationale which managed to fulfil both non-proliferation and commercial requirements in the eyes of State Department policy makers. This was based on the following construct:

(1) Washington was the most responsible global nuclear supplier.
(2) Non-proliferation goals were best served and attained by making sure that the US supplied the nuclear goods.

Under this conceptual framework, nuclear exports were initially not seen as a problem but rather as an important foreign policy tool, capable of turning the reactor sale into a 'partial NPT', no less, with the potential of paving the road to NPT adherence and the creation of a Nuclear Weapon Free Zone one day.

The Indian PNE led to a prolonged process of reconsideration of non-proliferation policy, underscored by the renewed interest in nuclear energy fuelled by the Arab oil embargo. These developments signalled a break with previous nuclear logic. If in 1974 the administration was willing to consider the vague condition of 'no first introduction' as a sufficient condition to fulfil non-proliferation requirements, making it possible for a client like Israel to buy nuclear reactors from the US without accepting comprehensive safeguards, by late 1976 this would not be the case. If at 1974 the policy pendulum was swinging towards accepting that Dimona would be left 'untouched' – by 1976 it had changed its course. Now it was swinging towards demanding safeguards on all facilities, and Israel found out that it had missed the nuclear exports train.

The Ford administration revitalized the nuclear exports talks in the summer of 1976 with limited intent to actually see them through, given the time constraint. The initialled agreements did not materialize into a real breakthrough as they were completed too late in Ford's term to be of significance. By late 1976 it was already clear that a new non-proliferation standard of comprehensive safeguards would be adopted, and it required clients to agree to safeguards on all of their nuclear facilities.

Against this backdrop, Carter executed his nuclear policy shift, adopting harsher export controls, effectively cancelling the signed 1976 agreement. How was Carter's policy shift perceived in Israel? Israel's unique status during the 1970s as the only nuclear capable country to adopt a posture of nuclear ambiguity had several implications in this respect. First, as opposed to other nuclear clients in the 1970s, who were hoping to use their nuclear power programmes as the basis for a weapons programme, Israel was already in possession of a nuclear arsenal. The US supplied reactors were never meant to provide Israel with a route to nuclear weapons. Consequently, Carter's decision to support a stricter policy, did not impact Israel's existing programme, and it was not perceived by the leadership as a threat to Israeli national security. It was not met with much political

resentment or a public outcry. This was aided by the fact that the Israeli public had internalized the taboo on nuclear discussions.

Furthermore, since the Israeli leadership was not unified behind the civilian nuclear programme, the delays it sustained were not mourned by everyone, and it is likely that those who objected to it in the first place, welcomed the delay. Lastly, Carter's policy shift was not considered by the relevant actors to be the last nail in the programme's coffin, and it was assumed that Israel would be able to buy reactors from other suppliers, should it choose to, in the following decade. This predication was wrong.

The Israeli case also underscores some case-specific points of significance which stem from Israel's unique position as a non-NPT nuclear weapon state with advanced technological abilities. Israel's understanding that the centrifuge uranium enrichment route would be the main cause of nuclear proliferation in the years to come is particularly interesting. It is broadly assumed that Israel constructed a clandestine centrifuge uranium enrichment plant at Dimona in the 1970s.[134] It is possible that this gave the Israelis a unique insider's view of the challenges ahead.

The importance of safety and security considerations for nuclear reactors located in a volatile region, and their relative costs, also played a major role in the Israeli thinking on the establishment of a nuclear power plant in Israel. It definitely contributed to the delay in setting a clear policy on NPP's. Security concerns diminished Israeli motivation to develop NPPs, and governmental support for the programme did not enjoy a consensus throughout the decade, as not all key players were 'on-board'.

Rabin's 1976 modification to the 'no first introduction' policy is interesting since it posits that nuclear weapons have already been introduced to the region. He singled out the 'Arab-Israeli conflict', as opposed to the Middle East in general. We can only make educated guesses as to why Rabin did this. Ironically, one possibility is that he was trying to legitimize non-Arab nuclear possession in the region, namely a future Iranian nuclear arsenal under the Shah, then an Israeli ally. Maybe he was trying to inject into the bilateral nuclear dialogue the notion that nuclear weapons had already been introduced to the region. Should this be cemented, it had the potential to create at some point down the road some 'wiggle room' for Israel to change its nuclear posture and end the ambiguity, thus not violating the 'no first introduction' guarantee.

Israel's Carter-era decision to prioritize the maintenance of its policy of nuclear ambiguity above the prospect of purchasing US power reactors also reflects Israel's culture of security.[135] In Israel, security considerations are often placed above all other considerations, and the nuclear realm is no exception. Decision makers are not likely to decide to change a given policy, let alone Israel's nuclear policy, for commercial-financial considerations. As of 2017, neither Israel nor Egypt operates a Nuclear Power Plant.

## Funding

This work was supported by the Israel Science Foundation [grant number 599/16].

## Notes

1. Archival research for this study was conducted at the Lindon B. Johnson Library, Austin, Texas, (LBJL), Richard M. Nixon Library, Yorba Linda, California (RNL), Gerald Ford Library, Ann Arbor,

Michigan (GFL), Jimmy Carter Library, Atlanta, Georgia, (JCL), National Archives and Records Administration, Maryland, (NARA), The British National Archives, Kew, UK, (TNA), The Israeli National Archive, Jerusalem, Israel (INA), the David Tuviyahu Archive, Be'er-Sheva, Israel (DTA), The Kibbutz Movement Yad-Tabenkin Archives, Ramat-Ef'al, Israel, The Knesset archive, Jerusalem, and several other archives.

2. For the history of nuclear power during the Cold War see: James Mahaffey, *Atomic Awakening: A New Look at the History and Future of Nuclear Power* (New York: Pegasus Books, 2010).
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4. Shimon Yiftah, *Nuclear energy in the world and in Israel*, [from Hebrew: 'Energiya Garinit Baolam Ve Beyisrael'] (Ramat-Gan: Masada Publishing, 1979). Shimon Yiftah, *The nuclear age in the Middle East* [from Hebrew: 'Haidan Hagarini Bamizrach Hatichon'] (Tel-Aviv: Am Oved Publishing), 1976.
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8. Fuhrmann argues that 'receiving civilian nuclear assistance over time increases the likelihood that states will begin nuclear weapons programs' see: M. Fuhrmann, 'Spreading Temptation, Proliferation and Peaceful Nuclear Cooperation Agreements' *International Security*, xxxiv (2009), 7–41. Fuhrmann refers to 'civilian nuclear assistance' and Kroenig refers to 'sensitive' nuclear technology. Kroenig concluded that powerful states are less likely to give nuclear assistance and that "states are more likely to provide sensitive nuclear assistance to states with which they share a common enemy". M. Kroenig, 'Exporting the Bomb: Why States Provide Sensitive Nuclear Assistance', *American Political Science Review*, ciii (2009), 113–33.
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10. Or Rabinowitz, *Bargaining on Nuclear Tests; Washington and Its Cold War Deals* (Oxford: Oxford University Press, 2014), 73.
11. Ephraim Asculai, 'The IAEA and Israel', in NSS Insight No. 135 (Tel-Aviv: Institute of National Security Studies, 5 Oct. 2009).
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18. 'Document 139. Information Memorandum From the Acting Director of the Office of International Scientific and Technological Affairs (Joyce) to Secretary of State Rusk', 3 September 1965, FRUS VOLUME XXXIV, 1964–1968, Energy Diplomacy and Other Issues https://history.state.gov/historicaldocuments/frus1964-68v34/d139 (Last accessed: 23 Aug. 2017).
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24. National Security File, Files of Harold Saunders, Box 18, File: Israel 10-1-68 - 1-20-69 [1 of 2], Letter to President Johnson from Israeli Prime Minister, Levi Eshkol, Israeli embassy in Washington, 17 Jan. 1969, LBJL.
25. It is assumed, though no official record has surfaced to date, that in this meeting Nixon and Meir reached secret understandings on Israel's nuclear status. The assumption is that Meir guaranteed that Israel would not declare or test its nuclear capabilities and in return Nixon guaranteed the removal of the issue from the bilateral agenda. See: Avner Cohen, *The Worst Kept Secret*, pp. 1–33.
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27. In 1977 Arad served as the General Director of Israel's national energy authority. See: 'Water balance 1974–1982' [from Hebrew]. Symposium on water desalination and energy in Israel, 8 Mar. 1977, Ramat-Ef'al, Hakibutz Hameuchad publishing, Lecture by Natan Arad, Galili collection, division 15, container 74, file 6, Yad Tabenkin archive, p. 25.
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37. Ibid.
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43. '"Nuclear Energy Cooperation with Egypt and Israel", memo from Lewis and Atherton to Secretary, 7 June. 1974 (attached to notes and draft agreements)', Winston Lord Papers.
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46. 'Nuclear Energy Cooperation with Egypt and Israel', 7 June 1974.
47. Bipartisan Leadership Meeting, 20 June 1974.
48. Bipartisan Leadership Meeting, 20 June 1974.
49. 'Nuclear Energy Cooperation with Egypt and Israel', 7 June 1974. This terminology was also repeated in: '"Annex E: Israel and Egypt", (attached to the draft memo Analytical Staff Meeting on Non-Proliferation Strategy ), Draft for Analytical Staff Meeting on Non-Proliferation Strategy, from Fred Ikle and Winston Lord to Kissinger, 31 July 1974 ', in Winston Lord Papers, Box 344 (MD: NARA).
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52. Annex E: Israel and Egypt, 31 July 1974.
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62. 'The contribution of nuclear technology to solving energy shortage', Shimon Yiftah.
63. Comments by Minister of trade and commerce, Haim Bar-Lev: Protocol of the 343th meeting of the 8th Knesset, 27 June 1976, p. 237, the Knesset archive.
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72. '"Rabin nominated two nuclear scientists to look into the implications of the Egyptian nuclear reactor" [from Hebrew],' *Ha'aretz* ,18 June 1974.
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119. 'Report of the meeting of the working committee on American policy, 4 May 1976', in *File: 'Israel-U.S', Sep. 1968–May 1976, 130.30/2-152*, INA.
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121. Dinitz served as Golda Meir's political advisor from 1969 to 1973, before serving as the Israeli Ambassador to Washington from 1973 to 1979. In this little known symposium held in September 1998 in Israel, Dinitz effectively acknowledged the existence of a nuclear understanding between President Richard M. Nixon and Israeli Prime Minister Golda Meir. See: Comments by Simcha Dinitz, pp. 26-29, in: 'The trilateral strategic forum: issues in the relations of Israel, the U.S. and American Jewry, Publication 9: Israel's nuclear policy as a component in its relations with the U.S.', the American Jewish Committee, Israel and Middle East Office, 17 Sep. 1998, ISBN 965-7005-06-X. p. 27.
122. Ibid.
123. 'untitled cable from Jerusalem to Washington embassy, 31 March 77,' in *USA – Minister Yigal Allon, correspondence, File: 6861-6* , INA.
124. Cable, 6 Apr. 1977, from Foreign Office to embassy in Jerusalem [a response] File: 6861-6, INA.
125. 'Water balance 1974–1982' [from Hebrew]. [Symposium on water desalination and energy in Israel, 8 March 1977, Ramat-Efal, Hakibutz Hameuchad publishing] Lecture by Israel Dostrovsky, 'Nuclear energy as the solution to Israel's energy problems', Yad Tabenkin archive, Galili collection, division 15, container 74, file 6, p. 13.
126. House Document number 95–131, 95th Congress, first session, 'Control of Nuclear Proliferation', Message from the President, P. 22.
127. Paul K. Kerr, 'U.S. Nuclear Cooperation with India: Issues for Congress,' Congressional Research Service Report, 26 June 2012, p. 21,
128. Ruth Schreiber, "Israel will delay the construction of nuclear power plants", Yedioth, 12 Dec. 1977, p.18.
129. 'Nuclear cooperation agreements with Egypt and Israel', Secret memo to the President from Cyrus Vance, 19 April 1979, in: Staff Material, Middle East, Box 11, Folder 7, JCL.
130. Ibid.
131. 'Subject: nuclear cooperation agreements with Egypt and Israel', Secret Memo from Robert Gates to Bill Quandt and Jessica Mathews, 7 May 1979, in: Staff Material, Middle East, Box 11, Folder 7, JCL.
132. Reporter in Jerusalem, 'The plan to construct a nuclear power plant at Nitzanim – canceled', (From Hebrew) Yedioth, 14 Aug. 1979, p.1.

133. Secret, [Cover letter of memo from Smith to President, Attached to 'Memo for the President, Subject: Non-Proliferation policy – Report of Gerry Smith, 24 Nov. 1980], 31 Oct. 1980, Staff Material, Global Issues, Box 52, Folder 11, JCL.
134. The centrifuges at Dimona later played, according to reports, a major role in the development of the Stuxnet worm, the malware which attacked the Iranian uranium enrichment centre in Natanz. See: William J Broad, John Markoff, and David Sanger 'Israeli Test on worm called crucial in Iran nuclear delay', New York Times, 15 Jan. 2011. http://www.nytimes.com/2011/01/16/world/middleeast/16stuxnet.html.
135. For the of discourse on Israel's nuclear project see: Baruch Kimmerling, Nuclear weapons and energy: the 'secret' elite discourse' [From Hebrew], pp.77–102, in: In the name of Security', eds. Majid Al-Haj and Uri Ben-Eliezer, Haifa University Press, Israel, 2003.

## Acknowledgments

I would like to thank the Israel Science Foundation (ISF) for its support in collection of archival materials for this article.