

Open
AccessCheck for
updates

RESEARCH ARTICLE

Section: *Literature, Linguistics & Criticism***Renegotiating contracts in major projects: Legal foundations, FIDIC principles, and a case study of the “Attarat” project**Rakan Nayef M. Al Sbeihi¹, Rami Omar Abu Rukba² & Malek Hamad Abu Naseir³¹Legal Researcher and Jordanian Lawyer, Jordan²Faculty of Law, Al-Ahliyya Amman University, Jordan³Imam Malik College of Sharia and Law, Dubai Academy City, United Arab Emirates*Correspondence: rakansbeihi@gmail.com**ABSTRACT**

Renegotiating long-term contracts has become increasingly important in major engineering and infrastructure projects, where unexpected economic, technical, or regulatory developments may undermine the contractual balance originally agreed upon by the parties. Although the principle of pacta sunt servanda continues to anchor contractual stability, contemporary legal doctrines—such as hardship, unforeseen circumstances, and gross unfairness—provide limited pathways for corrective intervention when strict enforcement produces inequitable results. In parallel, FIDIC contract forms integrate structured mechanisms for variations, price adjustments, and extensions of time, offering a practical framework for managing evolving project conditions while maintaining continuity and minimizing disputes. This paper examines the legal foundations of renegotiation and evaluates their practical application through an in-depth case study of the Attarat oil shale project in Jordan, a large-scale public-private partnership that became the subject of international arbitration. The analysis focuses on the state’s claim that the power purchase agreement had become grossly unfair and on the arbitral tribunal’s assessment, which relied heavily on financial indicators such as return on investment to determine whether the alleged imbalance met the threshold for legal intervention. The findings reveal that compelled renegotiation remains exceptionally narrow in scope, requiring robust and objective evidence of severe contractual distortion. The study further highlights the importance of embedding adaptive mechanisms into long-term contracts—such as periodic review clauses and clear rebalancing triggers—to safeguard both contractual stability and fairness. These insights contribute to the broader understanding of how legal principles and engineering contract practices can interact to support project resilience in dynamic operational environments.

KEYWORDS: contract renegotiation, FIDIC contracts, Hardship doctrine, Changed circumstances, gross unfairness, infrastructure projects, energy contracts, international arbitration, Attarat project, contract rebalancing

Research Journal in Advanced Humanities

Volume 7, Issue 4, 2026

ISSN: 2708-5945 (Print)

ISSN: 2708-5953 (Online)

ARTICLE HISTORY

Submitted: 10 July 2026

Accepted: 22 August 2026

Published: 24 September 2026

HOW TO CITE

Al Sbeihi, R., Abu Rukba, R., & Abu Naseir, M. (2026). Renegotiating contracts in major projects: Legal foundations, FIDIC principles, and a case study of the “Attarat” project. *Research Journal in Advanced Humanities*, 7(4). <https://doi.org/10.58256/ekzm5q53>



Published in Nairobi, Kenya by Royallite Global, an imprint of Royallite Publishers Limited

© 2026 The Author(s). This is an open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Renegotiating contracts in major projects is a critical issue that often arises when substantial changes occur during the execution of large engineering and construction works. Although the principle of contractual stability—*pacta sunt servanda*—ensures respect for the parties' obligations, unforeseen circumstances or new developments may render strict adherence to the original terms excessively difficult or cause severe harm to one of the contracting parties. In such situations, legal scholarship recognizes the doctrine of hardship and change of circumstances as a basis for reopening negotiations to restore the economic balance of long-term contracts]. Accordingly, an important legal and practical question emerges regarding the extent to which renegotiation is permissible to modify contractual provisions in order to adapt to new realities or mitigate disproportionate burdens.

The significance of this topic lies in identifying the legal foundations that justify renegotiation, particularly in long-term infrastructure and mega-project contracts that span many years. International contracting practices, especially those embodied in FIDIC standard forms, provide structured mechanisms for variations, adjustments, and dispute avoidance, reflecting a policy of maintaining fairness and balance between the parties throughout the life of the project (Awaisheh, Odeibat, et al., 2026). These mechanisms help manage risks associated with market fluctuations, price escalations, delays, and other unforeseen events commonly encountered in the construction and energy sectors.

In practice, numerous examples from global construction and energy markets demonstrate instances where parties were compelled to revisit their contractual arrangements due to significant changes in prices, timelines, or external circumstances. A prominent case in this regard is the Attarat Oil Shale Power Project in Jordan, which generated extensive legal debate concerning the fairness of the electricity purchase price and the need to amend—or potentially terminate—the agreement. The dispute escalated to international arbitration before the ICC, offering an instructive opportunity to examine the legal grounds asserted by the Jordanian government in seeking renegotiation or dissolution of the contract, as well as the way the arbitral tribunal interpreted and applied the relevant contractual provisions (Abdelrahman et al., 2026). The case further highlights the broader role of arbitration as a primary mechanism for resolving disputes in large-scale energy and infrastructure projects.

This study aims to provide a comprehensive legal analysis of renegotiating contracts in major projects through two main pillars. The first is theoretical, addressing relevant legal principles—including contractual autonomy, the doctrine of changed circumstances, and the mechanisms embedded within FIDIC forms. The second is applied, presenting an in-depth case study of the Attarat dispute in Jordan, with comparative reference to similar international precedents where applicable (Alrfoua et al., 2026). The subsequent section outlines the research problem and methodology, followed by a detailed legal analysis, the case study, and finally the key findings and recommendations.

MAIN TEXT

Theoretical Background and Problem Definition

The Concept of Renegotiation and Its Importance in Major Contracts

Renegotiation refers to the process through which contracting parties revisit the terms of an existing agreement to modify or adapt obligations in response to new developments that make continued performance unfair or impracticable. The need for renegotiation is particularly acute in long-term and large-scale project contracts, where economic, legal, and technological variables often evolve in ways that could not have been fully anticipated at the time of contracting (Tallon 1985; Gama 2020).

Global price volatility, legislative amendments, and extraordinary events—such as wars, pandemics, or major market disruptions—may disturb the contractual equilibrium or render performance excessively onerous (Ho and Liu 2002). Faced with such developments, parties usually confront two paths: insistence on strict performance, which may lead to substantial losses or project suspension, or renegotiation to adapt the contract to the altered circumstances. The latter serves as a risk-mitigation tool designed to preserve contractual relationships and prevent costly disputes by restoring fairness and ensuring project continuity (Gama 2020).

Renegotiation therefore operates as a mechanism of contractual resilience, enabling parties to manage uncertainty, adjust obligations, and prevent breakdowns in cooperative, long-term arrangements fundamental to major construction and infrastructure projects.

Legal Foundations for Contract Renegotiation

Contract law traditionally rests on the binding force of contracts—*pacta sunt servanda*—which requires that agreements be honored according to their terms (Smith 2017). Under this classical view, no modification may occur without mutual consent, and unilateral alteration is prohibited. While party autonomy permits consensual amendments, it does not allow one party to impose changes on the other.

However, many legal systems have introduced exceptions designed to address circumstances where rigid adherence to the original terms would produce inequitable or unreasonable outcomes (Awaisheh, et al., 2025). These exceptions form the legal basis for compelled renegotiation or judicial adaptation.

1. Hardship (Change of Circumstances)

Civil-law jurisdictions, especially those influenced by French and Egyptian law, recognize hardship as a basis for judicial intervention when unforeseeable and exceptional events make performance excessively burdensome (Ghestin 1993).

The Jordanian Civil Code adopts this doctrine in Article 205, which authorizes courts to reduce obligations to a reasonable level when “exceptional public events” occur that could not have been foreseen and render performance onerous but not impossible.

Hardship requires:

- an unforeseeable and exceptional event,
- severe impact on performance, and
- significant distortion of contractual equilibrium.

Judicial intervention aims to modify, not terminate, the contract—preserving continuity while promoting equitable outcomes.

2. Lesion (Gross Disparity)

Lesion applies when a substantial imbalance exists between the value provided by each party. Though traditionally limited to property transactions (McKendrick 2019), concepts of gross inequality and unfairness have increasingly influenced modern contractual disputes, especially in large-scale infrastructure projects.

In the Attarat arbitration, Jordan invoked “gross unfairness” to challenge the PPA tariff, arguing that the price imposed an excessive and unjustified burden on NEPCO as a public entity (Stimson Center 2023). Although Jordanian law restricts rescission for lesion in transactions between competent adults, the arbitral tribunal acknowledged that gross inequity could theoretically justify relief, particularly given the involvement of public funds (Jus Mundi 2024).

This recognition demonstrates that—even in commercial arbitration—economic imbalance may constitute a legitimate basis for contractual challenge when sufficiently severe.

3. Good Faith and the Duty to Renegotiate

Legal systems influenced by Germanic traditions, as well as international soft-law instruments like the UNIDROIT Principles, emphasize good faith and cooperative performance. Article 6.2.3 of the UNIDROIT Principles grants disadvantaged parties the right to request renegotiation when hardship occurs and obliges both parties to negotiate in good faith. If negotiations fail, courts or arbitral tribunals may adapt or terminate the contract (Al-Billeh, Hmaidan, et al., 2024).

Although soft law lacks binding authority unless incorporated by the parties, it reflects a global trend toward recognizing renegotiation as a legitimate contractual adjustment mechanism. The 2016 French Civil Code reform, introducing Article 1195, further demonstrates this shift by codifying the right to renegotiate in cases of unforeseen hardship.

4. Doctrines Governing Public Contracts and Concessions

Administrative law doctrines—such as *fait du prince* and administrative hardship—operate to maintain continuity of public services while shielding contractors from extraordinary losses. Although the Attarat

agreement was treated as a commercial rather than administrative contract, the principle of service continuity remained relevant; the arbitral tribunal noted that plant operations continued uninterrupted during the dispute (Jus Mundi 2024).

These doctrines share a common rationale: restoring contractual balance when circumstances have fundamentally shifted and protecting public interest without undermining private participation in major infrastructure projects.

Research Problem

This research addresses key questions concerning the legal conditions under which parties may renegotiate major project contracts:

- When may renegotiation be legally justified?
- Is mutual consent sufficient, or do certain legal rules permit or require renegotiation?
- What are the limits of contractual autonomy?
- How do FIDIC contracts regulate adjustments for unforeseen circumstances (Brown 2019)?

At the applied level, the Attarat Project provides a concrete case study illustrating the practical operation of these concepts and how arbitral tribunals evaluate claims of hardship and unfairness (Attarat Arbitration Award 2023).

Research Problem

The research problem arises from several interrelated questions central to the governance of long-term project contracts. First, under what legal conditions may parties renegotiate major project agreements, and when does mutual consent suffice to modify contractual obligations? Second, do legal systems recognize circumstances in which renegotiation is not merely permissible but required—whether due to hardship, gross disparity, or overriding considerations of contractual justice? These questions highlight the tension between contractual autonomy and the law’s corrective role in preserving fairness when unforeseen events alter the economic foundation of the agreement (Al-Khraisat et al., 2026).

A further dimension concerns the extent to which standard-form construction contracts—particularly FIDIC contracts, widely adopted in engineering and infrastructure projects—provide mechanisms for adjustment in response to changed conditions (Bunni 2013). FIDIC clauses governing variations, cost adjustments, extensions of time, and exceptional events play a substantive role in preventing disputes and reducing reliance on judicial or arbitral intervention.

At the applied level, the Attarat oil shale project in Jordan presents a concrete case through which these conceptual issues can be examined. The project raises practical questions: What legal grounds did the Jordanian government assert in seeking renegotiation? How did the arbitral tribunal evaluate those claims? And to what extent do comparable international energy and infrastructure disputes reveal patterns or precedents that illuminate the boundaries of contractual modification in similar contexts (Stimson Center 2023; Jus Mundi 2024)?

Research Methodology

This study employs a descriptive–analytical methodology combining theoretical examination with an applied case study. At the theoretical level, the research reviewed statutory provisions, judicial doctrine, international soft-law instruments, and leading scholarship across Arabic and English sources. Key materials included FIDIC contract conditions, civil-code doctrines on hardship and gross disparity, and comparative analyses of renegotiation in international commercial law (Karton 2019).

At the applied level, the study conducted an in-depth analysis of the Attarat Project, tracing its contractual structure, implementation timeline, and the evolution of the dispute leading to ICC arbitration. This analysis relied on official statements, policy reports, and analytical commentary from established research institutions and regional economic publications (Stimson Center 2023; Al-Sharif 2022).

To contextualize the Attarat case, a comparative benchmark was developed by examining international infrastructure and energy disputes in which states or investors pursued renegotiation or invoked hardship-based

claims. These precedents—including cases analyzed in Mistelis and Brekoulakis (2021)—helped identify common legal and economic triggers for renegotiation, as well as the evidentiary thresholds applied by international tribunals (Al-Billeh, Al-Hammouri, et al.,).

Legal Analysis: Renegotiation in Light of Contract Principles and FIDIC Practices

Contract Stability versus the Need for Adaptation

Major project contracts exhibit an inherent tension between the principle of contractual stability and the practical need for adaptation in response to changing circumstances. Traditionally, contracts have been viewed as final and binding instruments that clearly define the parties' rights and obligations, and it is presumed that foreseeable risks were accounted for during negotiation (Yas et al., 2026). Any subsequent attempt to alter the agreement may therefore be seen as undermining legal certainty and commercial stability (McKendrick 2018). However, long-term contracts frequently encounter uncertainty. This reality challenges the classical understanding of contract rigidity and highlights the rationale for renegotiation. A contract that cannot accommodate change may lead to insolvency or manifest injustice, while excessive flexibility risks eroding the very concept of binding obligation. Legal systems therefore attempt to balance these concerns by imposing narrow conditions for intervention. Hardship doctrines, for instance, generally require that the event be external, unforeseeable, and exceptional before judicial modification becomes permissible (Weller 2019). The related principle of *rebus sic stantibus* similarly allows for adjustment or release from obligations when circumstances fundamentally change, though its application remains strictly limited to avoid destabilizing commercial expectations (Hartkamp 2015). Renegotiation often proves more efficient than litigation or arbitration because it allows the parties to craft a mutually beneficial solution. Modern international contracts increasingly include Hardship or Renegotiation Clauses that identify specific events—such as major legislative changes, substantial increases in material costs, or severe currency depreciation—as triggers for reopening discussions (Schreuer 2005). These clauses embed adaptation directly into the parties' original consent and typically include procedural requirements such as notice, timeframes for negotiation, and fallback mechanisms such as expert evaluation or arbitration (Berger 2003). Recent research shows that the inclusion of such clauses is becoming more common in long-term investment agreements as a method for maintaining contractual viability in volatile environments (UNCTAD 2018).

FIDIC Contract Principles and Change Management

FIDIC contracts, widely used in engineering and construction projects, represent one of the most structured approaches to risk allocation and contract administration. Although they do not explicitly refer to “renegotiation,” FIDIC forms incorporate several mechanisms that function as built-in tools for contractual adjustment (IBA 2020). These mechanisms reduce the likelihood of disputes and limit the need for judicial or arbitral intervention (Alkuwari & Abdelrahman, 2026).

1. Variation Clauses

FIDIC contracts allow the employer to issue Variations that add, omit, or modify the works (FIDIC 1999, Clause 13). Resulting changes to the contract price or time for completion are determined by the Engineer or by agreement between the parties. These provisions function as a structured form of renegotiation, enabling continuous contract adjustment when design modifications or quantity changes occur.

2. Price Adjustment Mechanisms

Some FIDIC versions include price adjustment formulas to address cost fluctuations, particularly in long-term contracts (FIDIC 1999, Clause 13.8). Payments linked to price indices allow changes to take effect automatically without prolonged negotiation. When contracts omit such clauses, parties are left to rely on general doctrines such as hardship or force majeure. Scholars therefore recommend including price adjustment mechanisms in advance to avoid costly renegotiation later (Chapman 2017; Glover and Hughes 2011).

3. Extensions of Time and Exceptional Events

FIDIC provides structured mechanisms for delays caused by events beyond the contractor's control. Under Clause 8.4 of the 1999 Red Book, contractors are entitled to extensions of time for qualifying events. FIDIC

1999 Clause 19 (force majeure) and its updated counterpart, Clause 18 of the 2017 edition (“Exceptional Events”), allow time extensions and reimbursement of certain costs (without profit) in cases of impossibility or severe disruption (FIDIC 1999; FIDIC 2017). While force majeure concerns impossibility, hardship concerns excessive onerousness; both serve to preserve project continuity.

4. Multi-Tiered Dispute Resolution

FIDIC’s dispute-resolution model follows a multi-tiered approach: Engineer’s Determination → Dispute Adjudication/Avoidance Board → Arbitration (Trans-Lex 2021). This system encourages early resolution and limits escalation. Many disputes are settled before reaching arbitration, reflecting FIDIC’s philosophy of maintaining cooperation and minimizing project disruption.

5. Principle Against Unjust Enrichment

Although not expressly codified in FIDIC, the principle of unjust enrichment underlies several of its features. For example, entitlement to reasonable costs (excluding profit) for Exceptional Events distributes unforeseen burdens equitably (FIDIC 1999). This prevents one party from bearing disproportionate losses and supports the long-term viability of the contractual relationship.

6. FIDIC Golden Principles

FIDIC’s Golden Principles emphasize that the core risk allocation in the General Conditions should not be substantially modified (FIDIC 2019). Excessive amendments—especially one-sided provisions imposed by employers—can undermine contractual balance and increase the likelihood of disputes or renegotiation attempts. Maintaining these principles helps preserve contract stability and reduce future contention (Al-Awaysheh et al., 2026).

The Role and Limits of Contractual Autonomy in Contract Modification

Contractual autonomy forms the core of both contract formation and amendment. Because a contract is fundamentally the product of mutual consent, renegotiation is most effective when the parties voluntarily agree to modify one or more terms. Such consensual adjustments occur frequently in practice. For example, parties may mutually revise pricing terms in response to unexpected cost increases or extend completion deadlines following pandemic-related disruptions. These settlements demonstrate built-in contractual flexibility and are typically documented through addenda or variation orders. As long as the essential elements of contract formation—consent, object, and cause—are satisfied, no legal difficulty arises. Many legal systems actively encourage amicable settlements throughout the contractual relationship (De Ly 2012).

Difficulties emerge, however, when the parties fail to agree. A refusal to renegotiate—whether due to strategic advantage or inflexibility—raises the question of whether a contract may be amended without mutual consent. Under the general rule, unilateral modification is impermissible unless the contract expressly provides otherwise or the law authorizes intervention in exceptional circumstances (Naseir et al., 2026). When no renegotiation clause exists and negotiations fail, a party seeking adjustment must rely on judicial or arbitral intervention.

At this stage, exceptional doctrines such as hardship or gross disparity may apply. Courts may modify the contract by adjusting price, extending time, or reducing obligations to restore equilibrium, and such decisions bind the parties even absent mutual agreement because statutory authority permits intervention under defined conditions (Schwenzer and Manner 2020). Similar principles apply in arbitration. If the parties have empowered the tribunal to rule based on applicable law or equitable considerations, the tribunal may issue an award adjusting obligations. In the Attarat arbitration, the tribunal assessed fairness by examining expected investment returns to determine whether the tariff was unconscionably high (Petra News Agency 2023). Nonetheless, arbitral authority remains limited by the contract and governing law; tribunals cannot impose modifications unsupported by either source (Alsaraireh, Awaisheh, et al., 2026).

In the Attarat case, Jordan sought a declaratory ruling that the tariff was grossly unfair, which would entitle NEPCO to terminate the PPA if the imbalance were not remedied (The Jordan Times 2023). This request aimed to establish a legal foundation for termination rather than immediate modification, yet it presupposed

that termination for gross unfairness requires judicial or arbitral confirmation (Alsaraireh, Alrfoua, et al., 2026). In sum, contractual autonomy continues to serve as the primary mechanism for contract modification, but it is not absolute (Alhrerat et al., 2025). Legal intervention exists to prevent undue hardship or unjust enrichment, provided that strict statutory requirements are met and a competent authority issues a binding decision. This balanced approach prevents one party from being trapped by the arbitrary refusal of the other while maintaining stability by prohibiting unilateral alterations.

Price Adjustments, Schedule Modifications, and Changing Circumstances

This study examines three major categories of contractual modification—price adjustments, schedule changes, and responses to changed circumstances—that directly affect performance in large engineering projects.

1. Price Adjustments

Economic fluctuations such as inflation, spikes in material costs, and currency depreciation frequently prompt requests for price adjustment. In lump-sum or fixed-price contracts, contractors typically absorb moderate increases, but extraordinary and unforeseeable cost surges may jeopardize project viability (Hughes and Barber 2019). In these cases, contractors rely either on contractual mechanisms such as FIDIC Clause 13.8 (FIDIC 1999) or on hardship-based doctrines (Born 2021). Employers may agree to partial compensation to avoid delay or project suspension. When no express clause exists, tribunals apply hardship criteria, examining the severity, unpredictability, and external nature of the cost shock (Born 2021). The COVID-19 pandemic demonstrated this dynamic globally, as governments and contractors renegotiated payment structures and implemented temporary relief schemes (World Bank 2021). Ultimately, the burden of proving onerousness remains with the claimant (Alayaydeh et al., 2025).

2. Time Extensions

Delays expose contractors to liquidated damages and cause financial or operational challenges for employers. Renegotiation often focuses on extending time or waiving delay penalties when delays stem from events beyond the contractor's control. Even without explicit clauses, courts typically relieve contractors from liability when delays result from force majeure or employer-caused events (Keating 2020). When force majeure criteria are not fully met, parties routinely negotiate practical solutions, such as penalty-free extensions combined with acceleration agreements. Acceleration requires explicit consent and additional compensation; a contractor cannot be compelled to accelerate performance without payment (Pickavance 2016). Arbitral tribunals frequently grant extensions when delays qualify as excusable, thereby recalibrating the project schedule (Awaishah, 2025).

3. Changing Circumstances

Changes in legislation, import restrictions, or market conditions may alter the economic logic of long-term projects. These “changed circumstances” complicate renegotiation because they affect the foundational assumptions underlying the contract. Comparative experience shows varied outcomes. In several Latin American states, burdensome PPAs were successfully renegotiated, while in Indonesia following the 1997 financial crisis, unilateral suspension triggered costly arbitration, including the well-known Karaha Bodas case (GAR 2018; TDM 2004). By contrast, cooperative renegotiations in Mexico produced tariff adjustments without disputes. Thus, while substantial economic or regulatory shifts may justify renegotiation attempts, success depends on a contractual or legal basis—or a cooperative counterparty. Without this, unilateral action risks breach and significant damage.

In the Attarat dispute, Jordan argued that the tariff had become unfair due to the availability of cheaper energy alternatives (Associated Press 2023). The tribunal rejected this claim, concluding that market changes alone did not justify modifying a long-term PPA in the absence of express contractual provisions. This reinforces the principle that economic shifts do not automatically trigger renegotiation outside narrowly construed hardship doctrines or voluntary consent (Awaishah, Al-Abbadi, et al., 2025).

Case Study: The Attarat Project and the Legal Dispute over Renegotiation

Project Background and Key Contractual Provisions

The Attarat Oil Shale Power Project is the first large-scale facility in Jordan to generate electricity using domestically sourced oil shale as fuel. The plant has a net capacity of approximately 470 MW (2×235 MW), making it one of the largest energy-generation facilities in the country (Wikipedia 2023a). With an estimated cost of USD 2.1 billion, it is also the largest private-sector-financed energy project in Jordan (The Jordan Times 2022; AP 2023a).

The project was developed by Attarat Power Company (APCO), an international consortium that initially included Estonia's Eesti Energia. Subsequent restructuring led Malaysia's YTL Power to acquire a 45% share and China's Guangdong Energy Group to acquire another 45%, leaving Eesti Energia with the remaining 10% (Wikipedia 2023b). This ownership pattern reflects broader patterns of Chinese investment in regional energy projects under the Belt and Road Initiative (AP News 2023b).

Construction commenced in March 2017 and was supported by major financing arrangements backed by Chinese export credit agencies (7iber 2021). The project entered phased commercial operation between 2022 and 2023, with the first generating unit commissioned in October 2022 and the second in May 2023 (Wikipedia 2023c).

From a legal and contractual perspective, the project rests on multiple agreements between APCO, the Government of Jordan, and state-owned entities. These include:

- a Concession Agreement and an Implementation Agreement with the Ministry of Energy,
- a long-term Power Purchase Agreement (PPA) with the National Electric Power Company (NEPCO),
- a Grid Connection Agreement, and
- a Mining Agreement governing the supply of oil shale (Aawishe et al. 2024).

The PPA, signed in October 2014 for a 30-year term, obligates NEPCO to purchase the entirety of the plant's output at a predetermined tariff—an arrangement typical in Build–Own–Operate (BOO) projects (Wikipedia 2023d). According to official communications, the initial tariff was approximately 102 fils per kWh (about 14.4 US cents at the time) (Erem Business 2022). After adding grid-related charges, the consumer-level cost rose to around 130 fils/kWh (18.4 US cents) (7iber 2022).

APCO, however, stated that the lifetime average tariff would be significantly lower—approximately 73 fils/kWh—because the tariff formula decreases as debt is repaid over time (7iber 2023).

Despite these claims, the initial tariff remained high relative to emerging alternatives, especially after Jordan began importing much cheaper natural gas from Israel (AP News 2023c). The PPA also included a sovereign guarantee securing NEPCO's payment obligations, effectively placing long-term fiscal risk on the Jordanian treasury (Awaisheh, Alsaraireh, et al., 2025).

In essence, the contractual structure allocated substantial market and operational risk to the Jordanian side, granting investors guaranteed revenue regardless of changes in national demand or the availability of lower-cost energy sources. While such structures are standard in major BOO projects, they became problematic as Jordan's energy economy evolved.

By 2023, media analyses suggested that maintaining the PPA as originally structured could cost Jordan approximately USD 8.4 billion over the 30-year period (AP News 2023d). These concerns fueled public debate and contributed to the government's legal argument that the contract involved “gross unfairness” warranting renegotiation or relief.

Early Signs of Dispute and Attempts at Amicable Renegotiation

As the power plant approached operational readiness around 2019, the Jordanian government began reassessing the financial implications of the Attarat agreement. This reassessment coincided with a political shift, as Minister of Energy Hala Zawati (2018–2021) emerged as one of the strongest public critics of the project's cost structure. Government officials stated that several attempts had been made to reach an amicable settlement with the investors before resorting to arbitration (Jordan Daily 2020; Petra News Agency 2020).

According to later statements by the Director of the National Electric Power Company (NEPCO), the government's discussions with APCO included attempts to reduce the tariff—either through direct renegotiation

or by exploring the possibility of purchasing the project outright as a means of exiting the agreement (Jordan Daily 2021). These efforts were unsuccessful, likely because investors had little incentive to alter a contract that provided substantial financial stability through a long-term PPA. The investors' legal and commercial position was strong, and any proposed amendment may have appeared economically unjustified or incompatible with the principle of contractual stability (Al-Kasassbeh et al., 2024).

Facing this impasse, the government confronted a difficult choice: accept what it considered an excessively burdensome tariff for decades or pursue legal avenues to challenge the agreement. Ultimately, the latter option was chosen—though only after the government emphasized repeatedly that all amicable avenues had been exhausted (Petra News Agency 2020). This emphasis on good-faith efforts was significant, as it underscored the State's reluctance to enter adversarial proceedings unless necessary (Alhasan & Awaisheh, 2024).

Resorting to International Arbitration and Jordan's Legal Claims

In mid-2020, the Ministry of Energy formally announced Jordan's intention to initiate international arbitration before the International Chamber of Commerce (ICC) in Paris concerning the Attarat PPA (Awaisheh 2025). Two related arbitration claims were filed: one addressing the PPA and another contesting the enforceability of the sovereign guarantee securing NEPCO's payment obligations (The Jordan Times 2021). A three-member tribunal was constituted, and proceedings extended from 2021 to 2024 (Awaisheh & Al-Dabbas, 2024).

Jordan's central legal argument—summarized in public statements by Minister Zawati—was that the tariff constituted “gross unfairness” or “gross lesion,” thereby warranting judicial or arbitral reconsideration. Jordan sought a declaratory ruling affirming NEPCO's right to terminate the PPA if the unfair imbalance was not corrected (Awaisheh 2025). The government also requested a declaration that the sovereign guarantee should be deemed unenforceable due to the same underlying inequity (The Jordan Times 2021).

Importantly, Jordan did not seek damages or a direct revision of the tariff. Instead, it sought a legal acknowledgment that the agreement had become excessively burdensome and inequitable, thereby providing a gateway to future rescission or renegotiation (Al-Zubi et al., 2024). Jordan also argued that NEPCO's funds constitute public money and therefore cannot be bound indefinitely to extreme financial obligations without the availability of judicial oversight (Awaisheh 2025).

The government further presented the case as a matter of public interest, asserting that continuation of the PPA could increase consumer electricity prices by an estimated 17%—a significant socioeconomic impact (AP 2023). Public debate at times framed the Attarat arrangement in broader geopolitical terms, with references to “debt-trap diplomacy” and concerns over strategic dependence (AP News 2023).

The Investors' Position

The investor consortium, led by APCO, rejected Jordan's claims and defended the validity and economic logic of the PPA. APCO maintained that the tariff reflected the high costs and technological novelty of the oil-shale project, which required significant capital investment and was constructed in a remote desert environment (7iber 2022). The investors emphasized that the government had fully sanctioned the contract at the time of signing and had considered the project a strategic solution to Jordan's energy challenges (Awaisheh, Alkhamaiseh, et al., 2024).

The consortium also argued that the tariff would naturally decline over time due to the amortization of project debt, and that Jordan benefited from diversification of its energy sources. Legally, the investors relied on the principle of *pacta sunt servanda* and noted the absence of any clause in the PPA allowing revision simply because cheaper energy alternatives later became available. They stressed that they had invested approximately USD 2.1 billion in reliance on the contract's fixed terms, and that retroactive alteration would undermine Jordan's investment climate and credibility (7iber 2023).

Arbitration Proceedings and the Tribunal's Final Award

The arbitration proceedings extended over approximately four years (2020–2024), during which multiple hearings were held and extensive financial, contractual, and technical evidence was presented by both parties. Throughout the process, the Jordanian government emphasized that it continued performing the contract without interruption—neither suspending plant operations nor withholding payments due under the PPA (Petra

News Agency 2023a). This approach reinforced Jordan's credibility before the tribunal and demonstrated its commitment to the dispute-resolution mechanism, while also reflecting the State's obligation to avoid disrupting an operational public-service facility (Petra News Agency 2023b).

In August 2024, the arbitral tribunal issued its final award. The decision favored the investors (APCO), rejecting Jordan's claims and concluding that the tariff did not amount to gross unfairness (7iber 2024). Nonetheless, the tribunal acknowledged that Jordan's legal theory was, in principle, admissible; it did not dismiss outright the possibility of challenging the PPA based on gross unfairness if supported by adequate evidence (Erem Business 2024a). More notably, the tribunal recognized that NEPCO's funds qualify as public funds, thereby permitting potential challenges grounded in fairness or equity under Jordanian law (Erem Business 2024b). This recognition implicitly aligned with legal doctrines such as hardship and unjust imbalance, which allow intervention when contractual burdens become excessive (Awaisheh, Al-Hassan, et al., 2024).

To evaluate Jordan's claim, the tribunal applied an objective financial test centered on the project's return on investment (ROI). The tribunal reasoned that if the tariff were truly exploitative, investor returns would be extraordinarily high compared to sector norms (Petra News Agency 2024a). After reviewing APCO's financial projections and performance, the tribunal determined that the ROI, though possibly above average, did not reach a level that would constitute gross unfairness. As a result, Jordan's request for a declaration enabling NEPCO to terminate the PPA or invalidate the sovereign guarantee was denied (Awaisheh, 2023).

Despite the substantive loss, the tribunal issued a procedural determination that favored Jordan: neither party was ordered to pay the other's legal fees or arbitration costs (Erem Business 2024c). This diverged from typical commercial arbitration practice, where the losing party often bears a large portion of costs. Instead, each party was responsible for its own legal expenses, and institutional fees were divided—effectively sparing Jordan an estimated JOD 9 million (USD 10–13 million) in additional liabilities (Jordan Daily 2025). The tribunal further clarified that NEPCO would not incur any new financial obligations beyond those already stipulated in the existing PPA (Erem Business 2024d). Meanwhile, APCO would continue generating and supplying electricity as agreed (Alhasan et al., 2026).

Public commentary in Jordan described the award as a legal defeat but not necessarily a strategic one. Some analysts argued that the State could still derive long-term benefits from maintaining a domestically fueled power plant, particularly given regional energy uncertainties and possible interruptions in imported gas supplies (Nukhbeh Post 2024). Others advocated leveraging the plant's capacity to bolster national energy security rather than viewing it exclusively as a fiscal burden (7iber 2024b).

The Attarat award offers significant insights into the legal limits of State intervention in long-term infrastructure contracts. It reiterates that dissatisfaction with economic outcomes is insufficient to justify modification or invalidation of a contract unless supported by compelling evidence of gross unfairness (Petra News Agency 2024b). This evidentiary threshold aligns with international arbitration trends. A similar approach appeared in *AES v. Hungary* (ICSID, 2010), where the tribunal held that States may not retroactively revise PPAs merely because they become economically unfavorable (ICSID 2010). Likewise, Argentina's post-2001 ICSID cases show that "necessity" is accepted only narrowly, and even then, States often remain liable for compensation (GAR 2015).

Comparative experience confirms that successful State challenges to long-term contracts typically involve corruption, coercion, or procedural defects—not simply economic dissatisfaction. Jordan's claim, relying solely on gross unfairness, therefore faced a higher legal bar. Under investment law, contractual rights may constitute protected investments, and unilateral alteration risks claims of indirect expropriation or breach of fair and equitable treatment (Dolzer and Schreuer 2012). Jordan appeared aware of these risks and limited its claim to declaratory relief, avoiding demands for tariff modification or damages.

Regional precedents echo this pattern. Pakistan's efforts in 1998 to force renegotiation of IPP contracts resulted in reputational damage and costly settlements (GAR 2018). Indonesia's suspension of IPP projects following the 1997 crisis similarly triggered arbitrations, including *Karaha Bodas*, which resulted in a USD 300 million award for investors (TDM 2004). These cases illustrate that unilateral withdrawal from long-term energy contracts is seldom legally or financially sustainable. By contrast, collaborative renegotiations in several Gulf States during COVID-19 occurred without arbitral escalation.

Against this backdrop, the Attarat decision underscores the narrow and evidence-driven nature of

compelled renegotiation. The tribunal was not persuaded that APCO's returns reached levels that would justify intervention; expected IRR ranges of 10–15% for high-risk energy projects fell below the threshold required to demonstrate gross unfairness. Another noteworthy feature was the tribunal's refusal to impose adverse cost orders on Jordan, acknowledging that the claim was advanced in good faith based on a plausible legal theory (Al-Zubi et al. 2024). This preserved the State–investor relationship and prevented further escalation. Some reports suggested that APCO might consider future discussions on easing payment schedules following the award, though no official confirmation has been issued (JFRA News 2024).

The case ultimately highlights the importance of contract design. The absence of a periodic review clause—common in long-term PPP agreements—restricted the State's ability to seek tariff recalibration as circumstances evolved (Awaishehet al., 2026). Had such a clause existed, the dispute might have been contained without resorting to international arbitration.

Findings

Drawing on the theoretical framework and the Attarat project case study, several key findings emerge that illuminate the legal, contractual, and practical dynamics of renegotiating major project agreements:

1. The Narrow Legal Basis for Imposed Renegotiation

The analysis confirms that compulsory renegotiation remains an exceptional remedy. Although doctrines such as hardship and gross unfairness provide an avenue for judicial adjustment, they require strict conditions—unforeseeability, substantial economic disruption, and clear evidence of a distorted contractual equilibrium. As demonstrated in the Attarat arbitration, tribunals apply these doctrines cautiously and demand rigorous, quantifiable proof before considering any intervention.

2. Contractual Autonomy and the Primacy of Voluntary Adjustment

The study highlights that consensual renegotiation is both more feasible and more effective than forced modification. Infrastructure contracts routinely undergo cooperative amendments to adjust prices, timelines, and payment structures. The results reinforce the importance of continuous dialogue, relationship management, and proactive administration throughout the project lifecycle to avoid escalation into formal disputes.

3. FIDIC's Built-In Flexibility as a Preventive Mechanism

FIDIC conditions—particularly those governing variations, cost adjustments, and extensions of time—function as embedded adaptation tools that reduce the likelihood of contractual deadlock. Even though FIDIC does not explicitly use the term “renegotiation,” its structured mechanisms enable parties to absorb project developments without jeopardizing legal stability or resorting to adversarial proceedings (Alhasan et al., 2026).

4. The Critical Importance of Rebalancing and Review Clauses

The Attarat dispute demonstrates that long-term agreements require periodic review and renegotiation triggers to maintain fairness over decades of performance. The absence of such clauses severely constrained the government's options (Pérez Carrillo & Alhasan, 2026). Including predefined thresholds for tariff review or return-on-investment monitoring could have offered a contractual basis for adjustment in response to market changes.

5. Tension Between Public Interest and Contract Sanctity

The findings reveal a persistent conflict between public policy objectives and contractual stability. While governments may view certain long-term commitments as financially burdensome, arbitral tribunals tend to prioritize the sanctity of contract unless the unfairness is exceptionally severe. This reinforces the principle that states entering commercial transactions are bound by the same standards of contractual fidelity as private entities.

6. Implications for Investment Climate and State Credibility

Arbitration proceedings in long-term infrastructure contracts can affect a state's international standing. The

Attarat case illustrates how attempts to revise unfavorable agreements may raise reputational questions, even if pursued in good faith. Conversely, Jordan's compliance with the arbitral process strengthened perceptions of reliability, mitigating potential negative effects on investor confidence.

7. Evidence-Based Thresholds for Proving Unfairness

The study confirms that tribunals rely heavily on objective financial indicators—such as ROI or IRR benchmarks—to determine whether a contract is grossly unfair. Subjective or political assessments are insufficient. Thorough economic modeling is therefore essential before initiating legal challenges to long-term agreements.

8. Complementarity of Arbitration and Negotiation

Although arbitration may not grant revisionary remedies, it can serve as a catalyst for renewed negotiation. The post-award discourse surrounding the Attarat case suggests that arbitration outcomes often influence parties' willingness to consider voluntary adjustments. Thus, arbitration and negotiation can operate in parallel, with each shaping the other's strategic dynamics.

Recommendations

Based on the above findings, several policies and legal recommendations emerge to enhance the governance, flexibility, and fairness of long-term project contracts:

1. Incorporate Explicit Renegotiation, Hardship, and Review Clauses

Long-term infrastructure agreements should include clear contractual provisions requiring parties to renegotiate in good faith when significant economic or regulatory shifts occur. Hardship clauses, periodic tariff reviews, and ROI-based triggers can provide predictable mechanisms for adjustment and reduce reliance on litigation.

2. Strengthen Cooperative Contract Management Practices

Effective renegotiation depends on strong administrative capacity. Government agencies and project sponsors should institutionalize regular communication, transparent reporting, and early-warning systems for identifying potential imbalances. Training in dispute avoidance and contract administration can significantly reduce escalation risks.

3. Undertake Comprehensive Economic Scenario Analysis Before Contracting

Governments should adopt multi-scenario financial modeling during contract formation and throughout project implementation. Independent assessments of tariff competitiveness, demand projections, and long-term fiscal implications can help avoid entering agreements that may later become burdensome, as evidenced by the Attarat experience.

4. Develop Clear Domestic Legal Frameworks for Contract Rebalancing

Legislators may consider updating civil or commercial codes to codify criteria and procedures for adjusting long-term contracts. Clear statutory guidance can provide courts and tribunals with structured mechanisms for balancing contractual stability with fairness.

5. Utilize Mediation and Hybrid Dispute Resolution in Parallel with Arbitration

Given the relational nature of long-term contracts, mediation and conciliation should be used more frequently—either before or alongside arbitration. These mechanisms can facilitate mutually acceptable adjustments without the rigidity or publicity of formal awards.

6. Enhance Transparency, Oversight, and Public Communication

Large infrastructure contracts often carry political and economic sensitivities. Public reporting, parliamentary scrutiny, and independent pre-contract audits improve accountability and reduce the likelihood of disputes arising from unforeseen public reactions or misaligned expectations.

7. Encourage Investors to Exercise Constructive Flexibility

Investors should recognize the long-term benefits of demonstrating flexibility in extraordinary circumstances. Balancing strict contractual rights with practical accommodations can protect investor reputation and contribute to stable investor–state relationships, especially in politically sensitive sectors such as energy.

CONCLUSIONS:

This study analyzed the legal foundations and practical challenges of renegotiating major project contracts through both doctrinal examination and an applied case study of the Attarat oil shale project. The research shows that while renegotiation is an essential tool for maintaining the long-term viability of infrastructure agreements, the law offers only limited avenues for compelling contractual adjustment when one party is unwilling to cooperate. The findings contribute to the broader knowledge base by clarifying the legal thresholds governing hardship, unfairness, and judicial intervention, and by demonstrating how these doctrines operate in high-value international projects.

The study also highlights the value of FIDIC-based contractual frameworks, which incorporate structured mechanisms for adapting to unforeseen conditions without undermining contractual stability. The Attarat case illustrates the difficulty of proving gross unfairness in arbitration and emphasizes the necessity of objective economic evidence when contesting long-term financial commitments.

Overall, the research reinforces the importance of proactive contract design, good-faith collaboration, and continuous communication throughout project implementation. By integrating periodic review clauses, strengthening institutional capacity in contract management, and adopting balanced adaptation mechanisms, parties can better manage uncertainty, avoid costly disputes, and enhance the sustainability of complex cross-border infrastructure agreements. These insights contribute to improving professional practices in the fields of construction law, project management, and dispute resolution.

Data Availability Statement

No data, models, or code were generated or used during the study.

References

- 7iber. (2021). *Financing the Attarat power project: A deep dive*.
- 7iber. (2022). *Electricity pricing and public debate around the Attarat contract*.
- 7iber. (2023a). *APCO clarifies the lifetime average tariff*.
- 7iber. (2023b). *Investors defend the binding nature and economic logic of the Attarat PPA*.
- 7iber. (2024). *Analysts advocate maximizing Attarat output to strengthen energy security*.
- Abdelrahman, A., Awaisheh, S. M., Awaisheh, S. M., et al. (2026). Speaking—and silencing—the Constitution: A semiotic analysis of Jordan's Constitutional Court judgments (2025). *International Journal for the Semiotics of Law*. <https://doi.org/10.1007/s11196-026-10462-5>
- AES Summit Generation Ltd. v. Hungary (ICSID Case No. ARB/07/22). (2010). Award.
- Al-Awaysheh, S. M., Alsaraireh, N., Smairan, A. M., Awaisheh, S. M., Awaisheh, S. M., & Al-Khraisat, W. M. (2026). Medical liability for missing the opportunity for a patient's recovery or survival in Jordanian legislation: An analytical legal study. *Genetics and Molecular Research*. <https://doi.org/10.4238/ag42af18>
- Alayaydeh, H. A., Awaisheh, S. M., Al-Taani, M., Al-Dabbas, N. A., Alqudah, A. M.-A., & Awaisheh, S. M. (2025). The problem of establishing civil liability for harmful effects of smart robots. *Indian Journal of Information Sources and Services*, 15(4), 31–39. <https://doi.org/10.51983/ijiss-2025.IJISS.15.4.04>
- Al-Billeh, T., Al-Hammouri, A., Khashashneh, T., Al Makhmari, M., & Al Kalbani, H. (2024). Digital evidence in human rights violations and international criminal justice. *Journal of Human Rights, Culture and Legal System*, 4(3), 842–871. <https://doi.org/10.53955/jhcls.v4i3.446>
- Al-Billeh, T., Hmaidan, R., Al-Hammouri, A., & Al Makhmari, M. (2024). The risks of using artificial intelligence on privacy and human rights: Unifying global standards. *Jurnal Media Hukum*, 31(2), 333–350. <https://doi.org/10.18196/jmh.v31i2.23480>
- Alhasan, T. K., & Awaisheh, S. M. (2024). The right of public employees to defend disciplinary penalties in Jordan. *International Journal of Public Law and Policy*. <https://doi.org/10.1504/IJPLAP.2024.137783>
- Alhasan, T. K., Alqaisi, M., & Alabdallat, F. (2026). Governing automated credit after explainability: From transparency to contestability. *Social Sciences & Humanities Open*, 14, Article 103577. <https://doi.org/10.1016/j.ssaho.2026.103577>
- Alhrerat, K. A., Alnsour, T. M. Q., Almasarweh, S. I. M., Alqudah, A. M.-A., Awaisheh, S. M. A., & Awaisheh, S. M. (2025). Safeguarding electronic signatures in Jordan: Legal foundations and enforcement challenges. *Indian Journal of Information Sources and Services*, 15(4), 302–308. <https://doi.org/10.51983/ijiss-2025.IJISS.15.4.34>
- Al-Kasassbeh, F. Y., Awaisheh, S. M., & Odeibat, M. A. (2024). Digital human rights in Jordanian legislation and international agreement. *International Journal of Cyber Criminology*. <https://doi.org/10.5281/zenodo.4766803>
- Al-Khraisat, W. M. M., Awaisheh, S. M., Al-Wreikat, E. I., AbuMalik, T. H. M., Alkasasbeh, A. A. M., Alrfoua, A. Y., Awaisheh, S. M., & Abdelrahman, A. (2026). Administrative justice and regulatory governance in environmental licensing: Balancing legal certainty and sustainable development in Jordan and France. *Corporate Law & Governance Review*, 8(3), 113–120. <https://doi.org/10.22495/clgrv8i3p10>
- Alkuwari, K., & Abdelrahman, A. (2026). Third-party countermeasures in cyberspace: Reconciling state practice with the law of state responsibility. *Computer Law & Security Review*, 63, Article 106396. <https://doi.org/10.1016/j.clsr.2026.106396>
- Alrfoua, A. Y., Awaisheh, S. M. A., Al-Wreikat, E. I., Al-Khraisat, W. M. M., Awaisheh, S. M., & Abdelrahman, A. (2026). The role of administrative regulatory authorities in protecting the environmental sustainability of natural resources. *Scientific Culture*, 12(1-1), 1–9. <https://doi.org/10.5281/zenodo.11425133>
- Alsaraireh, N., Alrfoua, A., Al-Khraisat, W., Awaisheh, S., Alduros, S. M. S., Alja'afreh, I., & Alkhattab, K. A. R. (2026). Special privileges enjoyed by female public service employees (leave as a model): A comparative study of Jordanian and Bahraini legislation. In *Studies in Systems, Decision and Control*. Springer. https://doi.org/10.1007/978-3-032-04378-8_67
- Alsaraireh, N., Awaisheh, S., Alswelmeen, S., & Al-Maagbeh, M. (2026). The role of legal legislation in empowering women and supporting their participation in political life in light of Bahraini and Jordanian legislation. In *Studies in Systems, Decision and Control*. Springer. <https://doi.org/10.1007/978-3-032->

- Al-Sharif, O. (2022). Energy infrastructure disputes in the Middle East: Lessons from the Attarat project. *Middle East Economic Review*, 14(2), 77–95.
- Al-Zubi, J. K., Maaqqbeh, M., Awaisheh, S. M., & Mofleh, Y. A. (2024). Progress and challenges in the legal framework of women's rights in Jordan. *International Journal of Criminal Justice Sciences*. <https://doi.org/10.5281/zenodo.19128>
- Associated Press. (2023a). *Chinese investment in Jordan's energy sector under the Belt and Road Initiative*.
- Associated Press. (2023b). *Economic concerns surrounding the Attarat tariff*.
- Associated Press. (2023c). *Jordan's oil shale power deal and its fiscal impact*.
- Associated Press. (2023d). *Jordan's shift to cheaper imported natural gas*.
- Associated Press. (2023e). *Projected fiscal burden of the Attarat PPA*.
- Associated Press. (2023f). *Projected impact of Attarat tariff on consumer electricity prices*.
- Awaisheh, S. (2024). The status of digital evidence in administrative litigation. *Al-Balqa Journal for Research and Studies*, 27(3), 42–55. <https://doi.org/10.35875/pgdx2798>
- Awaisheh, S. M. (2023). Digital justice in Jordan: The role of virtual arbitration sessions in modernizing the legal system. *International Journal of Cyber Criminology*. <https://doi.org/10.5281/zenodo.4766609>
- Awaisheh, S. M. (2025). From paper to pixels: The legal status and challenges of electronic writing in administrative contracts—A comparative study. *Electronic Government*. <https://doi.org/10.1504/EG.2025.144726>
- Awaisheh, S. M., & Al-Dabbas, N. A. (2024). The dichotomy of interests: A comparative analysis of civil and administrative lawsuits in the Jordanian legal system. *International Journal of Criminal Justice Sciences*. <https://doi.org/10.5281/zenodo.19108>
- Awaisheh, S. M., Al-Awaysheh, S. M., Awaisheh, S. M., Khashashneh, T., Bqoour, K. J., Asfour, A., & Al-Khraisat, W. M. M. (2026). The effect of artificial intelligence of the development of phishing attacks. *Social Science Forum*, 10(8), 695–714. <https://doi.org/10.10118/SSFJ/2610839>
- Awaisheh, S. M., Alkhamaiseh, M. A., Al-Maagbeh, M. M., & Khalaileh, L. (2024). Artificial intelligence and its impact on administrative decision-making. *Journal of Human Security*. <https://doi.org/10.12924/johs2024.20114>
- Awaisheh, S. M., Alsaraireh, N., Alkasasbeh, A. A. M., & Odeibat, M. A. (2025). The extent to which recourse to arbitration is permissible in the settlement of procurement contract disputes. *Journal of Human Security*. <https://doi.org/10.12924/johs2025.210103>
- Awaisheh, S. M., Awaisheh, S. M., Abdelrahman, A., & Al-Thnaibat, O. H. A. (2025). Environmental governance and administrative judiciary in Jordan and France: A socio-legal comparative study. *International Journal of Sustainable Development and Planning*, 20(12), 5491–5501. <https://doi.org/10.18280/ijstdp.201238>
- Awaisheh, S. M., Odeibat, M. A., Awaisheh, S. M., Al Atiyat, M., Abdelrahman, A., & Al-Dabbas, N. A. (2026). Regulating commerce in the metaverse: Legal challenges of sales contracts in virtual environments. *Corporate Law & Governance Review*, 8(3), 214–222. <https://doi.org/10.22495/clgrv8i3sip3>
- Awaisheh, S. M. A., Al-Abbadi, H. S., Al-Dabbas, N. A., Hmaidan, R., Al-Khalaileh, L., & Al-Tarawneh, A. S. (2025). New claims and causes of action before the Court of Appeal in Jordanian civil procedure. *Journal of Human Security*. <https://doi.org/10.12924/johs2025.210108>
- Berger, K. P. (2003). *Renegotiation and adaptation of international investment contracts*. Kluwer Law International.
- Born, G. (2021). *International commercial arbitration* (3rd ed.). Kluwer Law International.
- Bunni, N. (2013). *The FIDIC forms of contract* (3rd ed.). Wiley-Blackwell.
- Chapman, A. (2017). Price adjustment and risk allocation in FIDIC contracts. *International Construction Law Review*, 34(1), 52–70.
- De Ly, F. (2012). *International contract law*. Kluwer Law International.
- Dolzer, R., & Schreuer, C. (2012). *Principles of international investment law* (2nd ed.). Oxford University Press.
- Erem Business. (2022). *Official tariff announcements for the Attarat PPA*.
- Erem Business. (2024a). *Cost allocation in Attarat arbitration award*.
- Erem Business. (2024b). *Legal basis of Jordan's claim acknowledged despite rejection*.
- Erem Business. (2024c). *Tribunal confirms no additional liabilities on NEPCO*.

- Erem Business. (2024d). *Tribunal recognizes NEPCO public fund status in unfairness claims*.
- FIDIC. (1999a). *Conditions of contract for construction (Red Book)*, Clause 13. Fédération Internationale des Ingénieurs-Conseils.
- FIDIC. (1999b). *Conditions of contract for construction (Red Book)*, Clause 13.8. Fédération Internationale des Ingénieurs-Conseils.
- FIDIC. (1999c). *Conditions of contract for construction (Red Book)*, Clause 19: *Force majeure*. Fédération Internationale des Ingénieurs-Conseils.
- FIDIC. (2017). *Conditions of contract for construction*, Clause 18: *Exceptional events*. Fédération Internationale des Ingénieurs-Conseils.
- FIDIC. (2019). *The FIDIC golden principles*. Fédération Internationale des Ingénieurs-Conseils.
- Gama, J. R. (2020). Renegotiation of long-term contracts in construction projects. *Journal of Construction Engineering and Management*, 146(4), 04020025.
- Ghestin, J. (1993). *La théorie de l'imprévision*. LGDJ.
- Global Arbitration Review. (2015). *Argentina's post-crisis utility tariff arbitrations*.
- Global Arbitration Review. (2018a). *Pakistan IPP renegotiation disputes of the late 1990s*.
- Global Arbitration Review. (2018b). *Renegotiation of long-term PPAs in Latin America*.
- Glover, J., & Hughes, S. (2011). *Understanding FIDIC: A practical guide to the 1999 Red and Yellow Books*. Informa Law.
- Hartkamp, A. (2015). *Modernisation of European contract law: Principles and impact*. Kluwer Law International.
- Ho, S. P., & Liu, L. Y. (2002). Contractor financial capacity and renegotiation of mega-project contracts. *Journal of Construction Engineering and Management*, 128(2), 131–140.
- International Bar Association. (2020). *Risk allocation in FIDIC contracts: A comparative study*.
- JFRA News. (2024). *Post-award discussions hint at possible payment restructuring for Attarat project*.
- Jordan Daily. (2020). *Government disclosure on attempts to renegotiate Attarat PPA*.
- Jordan Daily. (2021). *NEPCO statement on efforts to rectify Attarat tariff*.
- Jordan Daily. (2025). *NEPCO spent JOD 9 million on legal fees in Attarat arbitration*.
- Jordanian Civil Code No. 43 of 1976*, art. 205.
- Karton, J. (2019). *Hardship and renegotiation in international contract law*. Cambridge University Press.
- Keating, D. (2020). *Keating on construction contracts* (11th ed.). Sweet & Maxwell.
- McKendrick, E. (2018). *Force majeure and hardship in international contract law*. Oxford University Press.
- McKendrick, E. (2019). *Contract law: Text, cases, and materials* (9th ed.). Oxford University Press.
- Mistelis, L., & Brekoulakis, S. (2021). *Arbitration of international energy disputes*. Kluwer Law International.
- Naseir, M. H. A., Al-Ali, E., Bqoour, K. J., Al-Wreikat, E. I., Al-Awaysheh, S. M., Awaishah, S. M., & Al-Khraisat, W. M. M. (2026). Shortcomings in medical civil liability in Jordan and the role of public administration in addressing them. *Genetics and Molecular Research*. <https://doi.org/10.4238/5psp6j89>
- NEPCO v. Attarat Power Company* (ICC Arbitration Case No. 25916/AYZ). (2024). Award. Jus Mundi.
- Nukhbeh Post. (2024). *Is Attarat a strategic loss or a long-term advantage?*
- Ordonnance n° 2016-131 du 10 février 2016 portant réforme du droit des contrats*, art. 1195.
- Pérez Carrillo, E. F., & Alhasan, T. K. (2026). Building legally robust FIDIC 2017 e-claim infrastructures: Contract data design, platform governance, and enforcement of time bars. *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction*, 18(4), Article 03726007. <https://doi.org/10.1061/JLADAH.LADR-1616>
- Petra News Agency. (2020). *Energy Ministry: Amicable solutions exhausted before arbitration*.
- Petra News Agency. (2023a). *Government maintains plant operations despite legal dispute*.
- Petra News Agency. (2023b). *Jordan affirms continued compliance with Attarat PPA during arbitration*.
- Petra News Agency. (2023c). *NEPCO–Attarat arbitration developments: Tribunal's fairness assessment of the tariff*.
- Petra News Agency. (2024a). *Financial evidence standards in Attarat arbitration*.
- Petra News Agency. (2024b). *Tribunal applies ROI test to assess contract fairness*.
- Petra News Agency. (2024c). *Tribunal establishes ROI threshold for assessing unfairness in Attarat PPA*.
- Pickavance, K. (2016). *Delay and disruption in construction contracts* (5th ed.). Sweet & Maxwell.

- Schreuer, C. (2005). Hardship and renegotiation clauses in international investment agreements. *ICSID Review*, 20(2), 215–236.
- Schwenzer, I., & Manner, R. (2020). Hardship in international sales and construction contracts. *Uniform Law Review*, 25(1), 47–66.
- Smith, J. C. (2017). *Contract law and the binding force of agreements*. Oxford University Press.
- Stimson Center. (2023). *Jordan–China relations and the Attarat oil shale project*. Policy report.
- Tallon, D. (1985). Hardship. *International Encyclopedia of Comparative Law*, VII, Ch. 16.
- The Jordan Times. (2021). *Jordan initiates arbitration on PPA and sovereign guarantee*.
- The Jordan Times. (2022). *Attarat project reaches final construction phase*.
- The Jordan Times. (2023). *NEPCO seeks declaratory relief in Attarat power agreement arbitration*.
- Trans-Lex. (2021). *FIDIC engineer's determination under Clause 3.5*.
- Transnational Dispute Management. (2004). *The Karaha Bodas arbitration and state intervention in power projects*.
- UNCTAD. (2018). *World investment report: Investment and new industrial policies*.
- UNIDROIT. (2016). *UNIDROIT principles of international commercial contracts*, art. 6.2.3.
- Wikipedia. (2023a). *Attarat oil shale power plant*.
- Wikipedia. (2023b). *Attarat Power Company (APCO) – Ownership structure*.
- Wikipedia. (2023c). *Commissioning timeline of Attarat units*.
- Wikipedia. (2023d). *Power purchase agreement overview – Attarat project*.
- World Bank. (2021). *COVID-19 and the impact on global construction supply chains*.
- Yas, H., Allouzi, A. S., Sarhan, M. I., Abdelrahman, A., Abdalaziz, M. M. O., & Al Banna, M. (2026). Social media platform accountability: How UAE law addresses misleading content and platform responsibility. *Acta Innovations*, 61, 747–757. <https://doi.org/10.62441/actainnovations.v61i.842>