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Approval Drawing in EPC Fidic and its Implications on Contractual Injuries

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ABSTRACT

This research analyzes contractual challenges arising from the Owner's involvement in engineering drawing approvals within Engineering, Procurement, and Construction (EPC) contracts, using the 500 kV Sumatra Transmission Project as a case study. Under the FIDIC Silver Book, the contractor bears full responsibility for engineering, procurement, and construction; however, PT PLN (Persero)'s review and approval of drawings introduced legal ambiguity and contributed to delays that led to Extension of Time (EOT) claims. Using a normative legal research method, the study shows that delays caused by Owner-initiated revisions constitute a valid basis for EOT under Sub-Clause 8.4, provided claims are submitted timely and supported by evidence. Conversely, procedural non-compliance may classify such delays as contractor default, subjecting the contractor to liquidated damages. The research concludes that Indonesia's civil law framework has not fully integrated FIDIC Silver Book principles, particularly regarding EOT processes, risk allocation, and dispute resolution. The study recommends standardizing EPC governance and clarifying Owner involvement.

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INTRODUCTION

PT PLN (Persero), as the sole state-owned enterprise managing Indonesia's electricity supply business, has massive infrastructure development needs, including the construction of a 500 kV Sumatra transmission network. In implementing the project, PLN uses EPC contracts based on the FIDIC Silver Book—a contract model that assigns sole responsibility to the provider of goods and services. The main advantages of EPC contracts include cost and time certainty, as well as clear risk sharing, with most risks borne by the contractor (Lee, Lam, & Lee, 2015; Wang, Tang, Du, Duffield, & Wei, 2016). The EPC scheme was chosen to reduce fragmentation of responsibilities and provide cost and time certainty to the employer, at the expense of a greater risk burden on the contractor (Hughes et al., 2015). Delays in construction projects are classified into employer-caused delays, contractor-caused delays, and neutral delays (ElMasri, 2020; Misnan, Fauzan, Mustapa, Shukery, & Ismail, 2025; Parry, 2015; Wasfy & Nassar, 2021). Delays outside the contractor's control are categorized as excusable delays, entitling the contractor to an extension of time (EOT) and exemption from liquidated damages. Implementing EOT is essential to prevent unfair liability on contractors and to ensure completion time provisions do not become unenforceable (Society of Construction Law, 2022).

In practice, the FIDIC Silver Book limits the owner's involvement in the engineering process (FIDIC, 2017). States that any employer instruction causing changes to the agreed design—whether through drawing revisions, specification adjustments, or implementation methods—is categorized as a variation and must be processed via a formal mechanism

(Abotaleb & El-adaway, 2017; El-adaway, Fawzy, Allard, & Runnels, 2016; El-adaway, Vance, & Abotaleb, 2020; Neumann, 2016). These changes can directly impact costs and completion time, potentially entitling the contractor to an extension of time (Abendroth, 2016). However, in this transmission project, PLN continues to review and approve engineering drawings submitted by the contractor, leading to design changes and delays in procurement and construction (Moon, 2020; Nundwe, 2017; Pall, Bridge, Gray, & Skitmore, 2019; Ramphele, Vermeulen, & Pretorius, 2023). Consequently, the contractor applied for an extension of time (EOT) (Aminuddin, Ch'ng, & Ismail, 2024; Hasbi, Ismail, Mahat, Judi, & Malek, 2024; Okereke, Zakariyau, & Eze, 2021; Yusuwan, Adnan, Rashid, Ismail, & Mahat, 2021). PLN, however, argues that such approvals do not alter the contractor's responsibility, given the fixed-time and single-point responsibility nature of the EPC contract. This divergence in views has sparked contractual disputes.

Previous studies have examined various aspects of EPC contracts and EOT mechanisms, yet significant gaps persist. Research by Hughes et al. (2015) highlights risk allocation in EPC schemes but does not address the implications of owner involvement in drawing approvals for EOT entitlements. The Society of Construction Law (2022) outlines delay protocols but does not link them to conflicts between FIDIC Silver Book principles and Indonesian contractual practices. Meanwhile, Turner (1997) discusses variations as a basis for claims but does not explore how owner intervention in drawing approvals may qualify as a variation under EPC contracts. In Indonesia, studies on FIDIC contracts remain largely normative and general, lacking specific case analyses like the 500 kV Sumatra transmission project, where tensions arise between FIDIC provisions, national regulations, and state-owned enterprise practices. Therefore, this research fills this gap by analyzing the impact of drawing approvals on contractual breaches and EOT mechanisms within the Indonesian legal framework.

This situation underscores the need for in-depth academic study on the impact of approval drawing on contract breaches (contract injuries) in the EPC model, as well as its conformity with Indonesian law's civil law system.

The research questions are: (1) What are the characteristics and responsibilities of the parties in the EPC contract based on the FIDIC Silver Book? (2) What is the position of the approval drawing clause by the owner regarding risk sharing in the EPC contract? (3) Can delays due to owner-requested drawing revisions serve as grounds for an Extension of Time (EOT) claim? (4) What dispute resolution mechanisms apply to differing interpretations of delay responsibility? and (5) What policies should PLN adopt to prevent recurring contractual conflicts related to image approval in EPC contracts?

The objectives of this study are to analyze the scope and division of responsibilities in EPC contracts based on the FIDIC Silver Book, particularly regarding design, procurement, and construction work. It also explains the role of owner approval drawing in the EPC system and how such intervention affects risk allocation and contractual obligations. Furthermore, the study examines the legal basis and mechanisms for submitting Extension of Time (EOT) claims due to owner-requested or approved design revisions, including procedural requirements for the contractor. It identifies relevant dispute resolution mechanisms for EPC project delays, such as through the Dispute Adjudication Board (DAB), contractual negotiations, or arbitration. Finally, based on the analysis, it provides policy recommendations to PT PLN (Persero) for

improving EPC contractual governance, especially in EOT mechanisms, limits on owner involvement, and enhancing legal certainty to avert future conflicts.

RESEARCH METHOD

This research employed a normative legal approach, using legal norms as the basis for analyzing juridical issues in Engineering, Procurement, and Construction (EPC) contracts. The study applied several approaches: a statute approach examining positive legal provisions on contracts and construction services; a contractual approach reviewing clauses in the EPC FIDIC Silver Book and PLN contract documents to assess risk allocation, EOT procedures, and the role of approval drawing; a conceptual approach exploring ideas such as single-point responsibility, variation, breach of contract, delay, and Extension of Time (EOT); and a case approach analyzing the 500 kV Sumatra transmission project to evaluate approval drawing practices and project delays.

In this normative legal research, the population comprised relevant legal norms, contracts, documents, and sources. The sample was selected purposively, including the EPC contract for the 500 kV Sumatra transmission project, the 1999 and 2017 editions of the FIDIC Silver Book, and key construction services laws and regulations.

Data types included primary, secondary, and tertiary legal materials. Primary materials provided the normative foundation: provisions from the Civil Code, construction services laws, EPC FIDIC Silver Book contracts, and PLN documents for the Sumatra 500 kV transmission project. Secondary materials encompassed contract law books, journals, and articles on EPC, project delays, and EOT mechanisms. Tertiary materials supported conceptual understanding through legal dictionaries, encyclopedias, and guidelines like the Society of Construction Law (SCL) Delay and Disruption Protocol.

Data collection involved document review of contracts, engineering drawings, correspondence, addendums, and project reports; literature studies for theoretical foundations on EPC contracts and EOT mechanisms; and reconstruction of the project chronology from PT PLN (Persero) and contractor internal reports to trace approval drawing, design revisions, and delay sources.

Data analysis integrated grammatical, systematic, and comparative interpretations of FIDIC Silver Book clauses against Indonesian regulations; causality assessments linking approval drawing and revisions to delays; and the Critical Path Method (CPM) to evaluate impacts on the project timeline and EOT eligibility.

RESULTS AND DISCUSSION

Analysis of the approval drawing clause in the context of EPC contracts shows that although PLN's EPC contract adopts the FIDIC Silver Book which comes from the common law tradition, its application is still subject to the hierarchy of norms in the Indonesian civil law system, especially Law No. 2 of 2017, Government Regulation No. 22 of 2020, Presidential Regulation No. 12 of 2021, and the provisions of the Civil Code. In common law, the principle of design responsibility rests solely on the contractor is absolute, but in Indonesia, the actions of the Owner in the approval drawing process must be tested based on the limits of normative authority in laws and regulations. If the Owner exceeds its contractual authority to cause a

design change, the action may qualify as a variation, not just an administrative review. This is in line with the principles of lex superior derogat legi inferiori and lex specialis derogat legi generali, which emphasizes that PLN's internal provisions cannot override FIDIC if it is contrary to Law 2/2017.

From the perspective of comparative legal systems, common law places time as the main essence of the contract (time is of the essence) so delay is almost always categorized as a breach. On the other hand, in the Indonesian civil law system, default must meet the elements of fault and causal relationship, with Articles 1244–1245 of the Civil Code providing exemption from liability if the delay does not originate from the contractor. The principle of good faith in Article 1338 of the Civil Code also requires the Owner not to hinder the implementation of the work. Therefore, the Owner's intervention through the revision of the drawing has the potential to shift legal responsibility from the contractor to the Owner.

The study of legal causality is carried out through the but-for test, dominant cause test, and foreseeability test. The three tests show that without revision and delay in approval by the Owner, project delays will not occur; that image revision is the dominant cause affecting the critical pathway; and that the impact on material procurement delays can be reasonably predicted. Thus, the conditions of causality are met so that the EOT application can be legally justified. In this context, the Owner's actions affecting the design can be viewed as ultra vires, because in an EPC, the Owner does not have the substantive authority to change the design except through the mechanism of variation. Consequently, the revision becomes a variation, forming a legal basis for EOT, shifting some of the risk to the Owner, and giving rise to potential liability.

The principle of good faith further strengthens the argument. A delay in the approval of drawings by the Owner for months may be considered a breach of the obligation to act cooperatively and not hinder the contractor. This analysis is consistent with international jurisprudence, such as Obrascón Huarte Lain S.A. v. HM Attorney General for Gibraltar, which affirmed that delay on the part of the Owner remains the basis of the EOT despite late notice, as well as Gaymark Investments v. Walter Construction, which affirmed that the Owner cannot refuse the EOT if the delay is of its own origin. The arbitration principles of BANI and SIAC also show that employer-caused variation and delay in approval are categories of excusable delays.

Technical analysis based on the Critical Path Method (CPM) such as Figure 1 shows that the revision of the Owner's design affects the series of engineering–procurement–construction activities on the critical path of the project. Such delays cannot be absorbed by the float and cause a shift in the overall project schedule, so it technically qualifies as a delay that EOT deserves. Although Sub-Clause 20 of FIDIC requires notification within 28 days, precedents such as Gaymark and the more substantive than formalistic character of Indonesian law reinforce the argument that late notification does not extinguish EOT rights if the delay originates from the Owner.

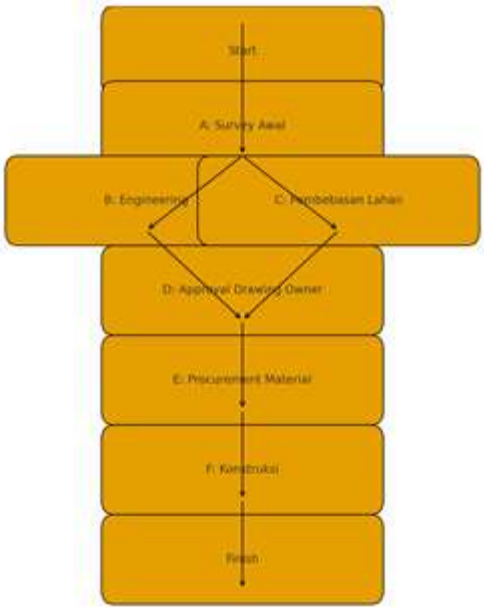


Figure 1. EPC contract CPM

Source: Author's analysis based on project timeline data from the 500 kV Sumatra Transmission Project

From a Law & Economics perspective, the delay in approval by the Owner incurs significant financial costs, including increased overhead costs, additional financing due to delayed cash flow, potential opportunity loss for PLN, and escalation of material prices. Economically, if the cost of delay borne by the Owner is greater than the value of liquidated damages (LD) that can be charged to the contractor, then EOT is more accurately given. Risk evaluation based on ISO 31000 shows that design revision is a risk in the high impact–high likelihood category so that it requires mitigation in the form of standardization of approval times, early warning mechanisms, and the establishment of a dispute board.

The IRAC/FIRAC approach shows that the main issue is whether the contractor is entitled to the EOT as a result of the revision of the drawings by the Owner. The legal rules of FIDIC 8.4 and Articles 1244–1245 of the Civil Code provide the basis that EOT can be granted if the delay comes from the Owner. The causality analysis reinforces this, so that the conclusion is that the contractor is entitled to EOT. Comparisons with EPC standards in the UK (NEC3/4), Australia (AS4300), and Singapore (SIA Contract) show consistency that employer-caused delays are generally the legal basis for EOT. Indonesia does not yet have a national EPC contract standard, so FIDIC adaptations often cause conflicts of interpretation. Thus, this study recommends the importance of strengthening EPC governance and clear restrictions on the authority of the Owner in the approval drawing process to prevent contractual disputes.

The analysis of the legal risk matrix in this study identifies four main risk categories that are relevant in the implementation of FIDIC Silver Book-based EPC contracts as shown in Table 1 below:

Table 1. EPC Contract Execution Risk Study

Risk	Probability	Impact	Level Risk	Mitigation
Revision of Owner image	High	High	High	Standardisation approval
Supply delays	Medium	High	Medium	Tight procurement schedule
Dispute EOT	High	High	High	Mandatory DAB

Contractual legal risks	Medium	Medium	Medium	FIDIC legal training

Source: Risk analysis based on ISO 31000 and data from the 500 kV Sumatra Transmission Project

Based on table 1, it can be explained first, the revision of the image by the Owner is classified as high risk because it has an equally high probability and impact, considering its direct influence on the series of engineering, procurement, and construction work. This risk requires mitigation through standardization of the image approval process so that design uncertainty can be minimized. Second, delays in material supply are categorized as medium risks, with a moderate probability but a high impact on procurement continuity, so stricter procurement scheduling is needed. Third, the potential for disputes related to Extension of Time (EOT) is also in the high-risk category, due to its frequency and magnitude of impact on project schedules. To mitigate these risks, the establishment of a Dispute Adjudication Board (DAB) is mandatory to provide a faster and more effective dispute resolution mechanism. Finally, contractual legal risks due to differences in interpretation of FIDIC clauses or inconsistency with national law are placed as intermediate risks, which can be addressed through capacity building of stakeholders through FIDIC legal training. Overall, this risk matrix demonstrates the importance of structured contract governance to reduce legal exposure and increase the certainty of EPC project implementation.

The philosophical approach to justice theory provides an important normative dimension in assessing the responsibilities of the parties in the EPC contract. In the framework of Justice as Fairness, John Rawls emphasized that the principle of justice is only fulfilled if a policy does not impose an undue burden on innocent parties. Thus, the application of liquidated damages (LD) to the contractor for delays that are actually caused by the Owner's actions is a form of procedural and substantive injustice because it violates the basic principle of fairness. Meanwhile, Ronald Dworkin's Rights Thesis theory places individual rights as "trumps" that cannot be ruled out by utilitarian considerations or unilateral actions. In this context, the contractor has an irrevocable right to obtain fair treatment, including recognition of EOT rights when the delay is not due to its own fault. Furthermore, Lon L. Fuller's view of the Rule of Law emphasizes that the validity of a legal action depends on the application of the principles of consistency, transparency, and predictability. Therefore, PLN as the Owner is obliged to ensure that the approval drawing process runs with clear, reliable, and unchanging procedures. These three theories together confirm that awarding an LD to a contractor in an owner-caused delay situation is not only technically and juridically wrong, but also contrary to the principles of fairness underlying modern legal practice.

In the perspective of dispute resolution through arbitration, an argumentation structure can be built by systematically outlining the positions of the parties. From the Contractor's side as the Claimant, the main argument is based on the fact that the delay of the project is a direct consequence of the Owner's actions, so that it legally qualifies as an excusable delay. Furthermore, the actions of the Owner who provide instructions or design comments that have an impact on substantial changes can be seen as a form of ultra vires instruction, i.e. actions outside the contractual authority in the EPC system. Based on Sub-Clause 8.4 of the FIDIC Silver Book, the contractor has the normative right to obtain an Extension of Time (EOT) when the delay originates from the Employer, and the reinforcement of this principle is found in

various international jurisprudence which confirms that the Owner is not allowed to refuse EOT if the delay is due to his own actions.

On the other hand, the Owner as the Respondent generally argues that the approval drawing process is only a form of administrative review that does not transfer the responsibility of the design, so that the delay remains within the scope of the contractor's responsibility. However, this argument can be systematically refuted through the contractor's rebuttal, which shows technical evidence in the form of a critical path shift that arises after the submission of comments or revisions by the Owner, thus proving that the action has a direct impact on the delay of the project and cannot be classified as an ordinary review.

Based on this description, the contractor applied to the arbitration panel to: (1) grant the EOT claim in full, (2) declare that the contractor was not in breach of contract, and (3) reject the application of liquidated damages (LD) because the delay did not originate from the contractor. This argument asserts that both technically and judicially, delays caused by the Owner's intervention must be borne by the Owner, consistent with the principles of contractual fairness and international standards in construction disputes.

CONCLUSION

The legal analysis concluded that the owner's drawing revisions exceeded EPC contract authority, qualifying as a variation with a clear causal link to project delays, as confirmed by critical path analysis and juridical testing. This validated the contractor's right to an Extension of Time (EOT), aligning with FIDIC Silver Book provisions, contract law doctrines, and international precedents recognizing owner-sourced delays as excusable. The owner's delays in approval drawing also risked violating good faith principles under Indonesia's civil law system, strengthening the contractor's position across both Indonesian frameworks and FIDIC's common law foundations. For future research, scholars could examine empirical data from multiple Indonesian EPC projects to develop standardized approval drawing protocols that balance owner oversight with contractor autonomy.

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