EVALUATION OF CONSTRUCTION SUBSTATION CONTRACT DISPUTES WITH REFERENCE TO FIDIC CLAUSES

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Abstract

Substation construction projects are a vital component in the development of power infrastructure. The complexity of the work, involvement of multiple parties, and extended project durations often lead to potential contractual disputes between employers and contractors. The FIDIC (Fédération Internationale des Ingénieurs-Conseils) contract clauses are widely adopted in strategic projects as an international standard for contract management. This study aims to evaluate the types of disputes arising in substation construction projects under FIDIC-based contracts and to analyze the effectiveness of dispute resolution mechanisms outlined in the relevant clauses. A qualitative research method was used, employing a case study approach on several substation projects in Indonesia. Data were collected through document analysis, interviews with construction practitioners, and legal analysis of relevant FIDIC provisions. The findings indicate that common disputes include project delays, differing interpretations of technical specifications, and payment claims. FIDIC clauses, particularly those related to dispute resolution (Sub-Clause 20), are considered effective in providing a resolution framework, although practical implementation still requires adjustment to national laws and institutional capacities. This study offers strategic recommendations for mitigating contractual risks and improving FIDIC-based contract governance in the power sector.

Keywords: *construction contract, substation, FIDIC, dispute, dispute resolution*

INTRODUCTION

The development of electrical infrastructure is a strategic aspect in supporting national economic growth, particularly in developing countries like Indonesia. One of the crucial components in the electrical system is the substation, which serves as the distribution hub for power from generation plants to transmission and distribution networks. The technical complexity of building substations, ranging from civil, mechanical, electrical works to the integration of control and protection systems, makes these projects highly susceptible to various risks, including delays, cost overruns, and disputes between the involved parties.

In the implementation of substation projects, the construction contract acts as the primary legal instrument regulating the relationship between the owner and the contractor. Since such projects often involve international financing or cooperation with foreign parties, international contract standards like FIDIC (Fédération Internationale des Ingénieurs-Conseils) are commonly used. FIDIC is widely recognized in the construction sector because it provides a relatively comprehensive and flexible contractual framework and offers systematic dispute resolution procedures.

However, the application of FIDIC clauses in construction projects in Indonesia, particularly for substations, does not always proceed smoothly. Although FIDIC provides clear guidelines regarding the rights and obligations of the parties, numerous contractual disputes still arise. These disputes are often caused by differing interpretations of clauses, discrepancies between field practices and the contract contents, or a lack of harmony between FIDIC and national regulations such as the Construction Service Law and Presidential Regulations on government procurement of goods/services.

One significant challenge in applying FIDIC contracts in Indonesia is adapting to the national legal system, which follows civil law principles. Several clauses in FIDIC, such as dispute resolution mechanisms through the Dispute Adjudication Board (DAB) or international arbitration based on ICC or UNCITRAL rules, are sometimes not fully

compatible with domestic legal procedures. This can create obstacles in dispute resolution processes and even prolong litigation.

Moreover, in practice, not all construction professionals fully understand the contents and structure of FIDIC contracts. Many local contractors use FIDIC merely as a formality or because it is a requirement for international lenders, without having the human resources capable of managing contracts professionally. As a result, when disputes arise, their resolution tends to be reactive, unstructured, and often disadvantageous to one of the parties, particularly the contractor. Examining disputes arising from substation projects with FIDIC contracts is crucial, given the strategic and large-scale nature of these projects. An evaluation of the types of disputes commonly encountered, the resolution mechanisms, and the effectiveness of FIDIC clauses in the local context can provide valuable insights into how well these contracts accommodate the needs of the parties. This evaluation can also help formulate strategies for dispute prevention and institutional capacity building in contract management.

This study aims to:

- Identify the types and causes of disputes that commonly occur in substation construction projects with FIDIC contracts.
- Analyze the effectiveness of dispute resolution clauses in FIDIC, particularly Sub-Clause 20, in addressing these disputes.
- Evaluate the relevance and challenges of applying FIDIC in the legal system and construction practices in Indonesia.

The primary focus is on substation projects financed through government investment schemes or cooperation with international institutions, where FIDIC is commonly used.

RESEARCH METHOD

This study uses a qualitative approach with a descriptive-analytical method to deeply understand the issues arising in the implementation of FIDIC-based substation construction contracts and to evaluate the effectiveness of the dispute resolution

mechanisms offered by the clauses within the contract. This approach is chosen because the study aims to explore complex legal and construction practices and to uncover the perceptions and experiences of project stakeholders regarding the application of FIDIC in the field.

1. **Type and Approach of Research**

   This study is classified as normative-empirical legal research, meaning it examines written law (normative) and its practical implementation (empirical). Normative research is conducted by analyzing legal documents, regulations, and the FIDIC contract texts, particularly those related to dispute resolution. The empirical aspect is studied through field data collection in the form of interviews and case studies of substation projects that have used or are using FIDIC contracts.

   This approach aims to assess the alignment between the ideal concepts in FIDIC clauses and the realities encountered in practice. It also provides an understanding of how the parties (project owners, contractors, and consultants) understand, interpret, and apply FIDIC provisions in resolving disputes.

2. **Sources and Data Collection Technique.**

   The sources of data for this research are divided into two categories:

   • **Primary data**: Collected through in-depth interviews with individuals who have direct knowledge and experience related to substation construction projects with FIDIC contracts. These informants include:

   - Officials from the project owner institutions (PLN or relevant government agencies)
   - Project managers or contractor representatives
   - Construction legal consultants
   - Experts or academics in contract law and construction management.

   - **Secondary data**: Obtained from literature studies, including:
     - FIDIC project contract documents (Red Book and Yellow Book)
     - Construction-related regulations in Indonesia (Law No. 2 of 2017, Presidential Regulation on procurement, etc.)

- Scholarly literature, journal articles, textbooks, and previous research findings
- Relevant arbitration or court decisions

Data collection techniques involve documentation and semi-structured interviews. Interviews are conducted with open-ended questions to allow respondents to provide comprehensive and in-depth information regarding their experiences in dealing with project disputes.

3. Case Study

To delve into the context of FIDIC application in substation projects, a case study method is used for 2–3 projects that have been completed or are ongoing. These projects are purposively selected based on the following criteria:

- Use of FIDIC-based contracts (at least the 1999 or 2017 Red Book version)
- Involvement in significant disputes or claims during implementation
- Availability of project data accessible through collaboration with project owners or relevant parties

Each case study is analyzed from the following perspectives:

- Types of disputes that arose
- Dispute resolution mechanisms used
- The role and responses of the parties to FIDIC clauses
- Final outcomes and evaluation of resolution effectiveness

4. Data Analysis Technique

The collected data is analyzed using thematic analysis, identifying major themes that emerge from interviews and documents. The analysis process involves.

- Transcribing and Coding Interview Data
- Categorizing data into main themes, such as "types of disputes," "disputed clauses," "resolution mechanisms," and "implementation challenges".
- Interpreting the data based on contract law theory, construction risk management, and dispute resolution practices in infrastructure projects

Comparative analysis is also conducted to compare the practice of FIDIC contract implementation in the field with national legal provisions and ideal theoretical concepts found in the literature. This way, gaps between theory and practice, as well as their causes, can be identified.

5. Data Validity

To ensure the validity and reliability of the data, source triangulation is carried out by comparing information from different parties. Additionally, the researcher validates key findings by confirming them with informants through follow-up interviews or email correspondence. The documentation used is also verified by checking the consistency between the contract documents and their implementation in the field.

6. Research Limitations.

This research has several limitations, including :

- The research focuses solely on substation projects using FIDIC contracts and does not cover other types of electrical projects like power plants or transmission networks.
- Data availability is highly dependent on the openness of the relevant parties to provide access to contract documents and dispute chronologies.
- This study does not analyze the technical aspects of construction implementation in detail but focuses only on the contractual and dispute management aspects.

Despite these limitations, the findings remain relevant, as the study focuses on the legal and managerial aspects that are at the core of the issues being examined.

RESULT AND DISCUSSION

1. **Common Disputes in FIDIC-based Substation Projects.**
   The research results show that substation projects in Indonesia using FIDIC contracts often face various disputes, both during the implementation phase and upon project completion. Based on case study data and interviews with practitioners, the three most common types of disputes are :

   - **Disputes related to project delays.**
     These disputes typically arise due to delays caused by either the contractor (contractor's delay) or the employer (employer's delay). In some cases, delays lead to contractors submitting claims for an extension of time (EOT), which are then disputed by the employer regarding the validity of the reasons and supporting evidence.
   - **Disputes over payments and additional cost claims.**
     Many contractors submit claims for additional costs due to design changes, work disruptions, or discrepancies in field conditions. Disputes arise when the employer does not approve these claims, often due to incomplete documentation or differing interpretations of payment clauses.
   - **Distes resulting from variations**
     Changes in work scope during project implementation are common, but in some cases, the employer and contractor do not agree on the value of changes, the basis for approval, or the variation submission procedures. These disagreements often lead to arbitration.

   These disputes usually arise from weaknesses in project planning, poor communication between parties, and a lack of understanding of the procedures and rights outlined in the FIDIC contract.

2. **Common Disputes in FIDIC-based Substation Projects.**
   Effectiveness of FIDIC Clauses in Dispute Resolution
   FIDIC contracts, particularly the 1999 Red Book and Yellow Book versions, provide a tiered dispute resolution mechanism that includes :

- **Engineer's decision (Sub-Clause 3.5 and 20.1)**
  The first stage is internal resolution through the engineer's determination. However, in practice, many engineers are not independent as they work under the employer's pressure, resulting in biased decisions.
- **Dispute Adjudication Board (DAB) / Dispute Avoidance and Adjudication Board**
  FIDIC recommends establishing a DAB or DAAB early in the project. However, in Indonesia, DAB formation is still rare, especially in projects funded by the state budget, because there are no national regulations explicitly governing the role of such bodies. As a result, many disputes that should be resolved at the DAB level are directly taken to arbitration or litigation.

  International arbitration
  FIDIC clauses provide that if a dispute is not resolved at the DAB, it can be taken to international arbitration. In practice, the use of arbitration remains limited due to high costs, lengthy processes, and the lack of preparedness among most local contractors to handle international forums. Most contractors prefer to resolve disputes through informal mediation or renegotiation.

  Although FIDIC provides a fairly comprehensive dispute resolution framework, the study shows that its effectiveness heavily depends on the understanding and commitment of the parties to follow the procedures outlined. In many cases, the formal mechanisms are not properly followed, leading to disputes escalating into open conflicts that damage working relationships and hinder project progress.

3. **Challenges in Applying FIDIC in Indonesia's Context**
   Some challenges identified in the application of FIDIC contracts in substation projects in Indonesia include :
   - **Incompatibility with the national legal system**
     FIDIC is a standard contract based on common law, whereas Indonesia follows a civil law system. This difference makes some clauses,

particularly those related to dispute resolution and third-party designation, difficult to fully adopt without legal adjusment.

- **Lack of understanding of FIDIC**

  Many project stakeholders, particularly local contractors, do not fully understand the substance and implications of FIDIC clauses. This leads to procedural deviations and insufficient documentation when claims or disputes arise

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4. Practical Implications and Recommendations

The findings of this research highlight the importance of enhancing institutional and regulatory capacity to support the application of FIDIC. Several recommendations include:

- Improved training for project stakeholders on understanding and implementing FIDIC contracts, especially in managing claims and dispute resolution.
- Adjustment of national regulations to accommodate the establishment of DAB/DAAB and integrate FIDIC's dispute resolution mechanisms into Indonesia's legal framework.
- Enhancing the independent role of engineers or project managers to ensure that initial decisions on claims and disputes are unbiased and can prevent escalation to arbitration.

CONCLUSION

This study demonstrates that the application of FIDIC contracts in substation construction projects in Indonesia faces several challenges, especially in dispute resolution. The most frequent disputes include project delays, additional cost claims, and variations. Although FIDIC contracts provide a systematic and tiered dispute resolution mechanism, their effectiveness in practice is still limited by various factors. The main factors influencing this ineffectiveness include a lack of understanding among parties about the FIDIC clauses, suboptimal roles of independent engineers or adjudicators, and the absence of regulatory support for mechanisms like the Dispute Adjudication Board (DAB) or Dispute Avoidance and Adjudication Board (DAAB). As a result, many disputes linger and disrupt project implementation. From this evaluation, it can be concluded that the successful implementation of FIDIC contracts in substation projects largely depends on the technical, legal, and institutional preparedness of the parties. Therefore, efforts to improve the capacity of project stakeholders in managing FIDIC contracts, as well as harmonizing FIDIC provisions with the national legal system, are necessary for more effective and efficient dispute resolution procedures.

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