

## Summary

Corruption risks of the nuclear power plant investments:  
What can we expect in the case of Paks II?

### Introduction

1. In January 2014 the Hungarian Government announced that it reached an agreement with the government of Russia concerning the construction of two new reactors to replace current capacity at the Paks nuclear power plant. Paks I. is a Soviet-built plant operational since 1983-1987. It is the only nuclear power plant in the country and provides about 40% of Hungarian electricity consumption. With an estimated budget of 3-4 trillion Hungarian forint (9-13 billion euros), the project will be the single largest investment in Hungary in the next decade. The investment will be financed with credit provided by the Russian government.
2. Our study analyzes the corruption risks of the planned Paks nuclear power plant investment based on relevant economic theory and empirical results, and summarizes lessons learned from similar Hungarian and foreign investments. We also estimate social and corruption-related losses expected during the project.
3. Based on different aspects analyzed in the study, the Paks II investment involves high corruption risks. These risks can and should be minimized. Given the size and scope of the project, activism on this front is clearly in best interest of the Hungarian people.

### Specific Risks

4. Due to the sophistication and novelty of the technology involved, the investment has an intrinsic information asymmetry that could easily be misused by the contractor. Additionally, the nature of investment projects of this scale will further increase corruption risks. Big, lasting projects create a complex relationship network between project participants, including the organization set up by the customer, the coordinating project office, the contractors and subcontractors. For buyers and sellers alike there is a notably higher potential for abuse that would be the case for a simpler, smaller-scale project.
5. Both the theoretical economics literature on corruption and the characteristics of the project indicate high corruption risks. There are only a few companies able to construct a nuclear power plant, while on the buyer's side governments typically the only customers. Such bilateral monopolies generate more opportunities for abuse on both ends of the contract than in the case of standard market contracts.
6. The literature on project management of large investments and specifically those papers on the construction of nuclear power

plants draws attention to risks related the implementation of these projects. The clearest takeaways are that deadlines will very likely be missed and that related budget overruns are rather the rule than the exception. With the establishment of appropriate project management practices these risks can be reduced.

7. In the recommendations and guidelines provided by the International Atomic Energy Agency emphasis is put on the importance of using adequate resources to set up and operate organizations that control budgets and monitor whether deadlines are kept in case of nuclear power plant investments. Investments implemented with the help of new technologies are increasingly more complex. Therefore they involve higher risks concerning contractors and security.
8. Recent European nuclear power plant construction projects underline the prudence of these recommendations. Protracted and increasingly costly, controversial investments can be found in Finland, France and Russia. Recent East Asian experience also suggests that the construction and the operation of a nuclear power plant carry high corruption risks.
9. Domestically speaking, past examples of similarly large Hungarian investments show that implementing such a project entails serious risks. Poor project management, legal disputes and licensing scandals, cost overruns and long overdue investment deliveries characterize Hungarian projects. In the Hungarian environment much higher corruption risks can be demonstrated than in Western Europe.
10. The signed agreement does not include either additional work clauses, nor does it address the question of penalties, with the exception of penalties to be paid by the Hungarian state in case of delays in the repayment of the loan. The national experience has shown that most of the time delays and additional work provide opportunities for abuse. The shortcomings of the current agreement therefore provide a great scope for corrupt transactions.
11. International empirical studies on similar projects demonstrate that at least 5% of the value of the investment is exposed to corruption risks. According to Hungarian data, the corresponding value at risk and reach 13-16% of the total investment. Social losses associated with corruption can amount to even more. In gross terms we are speaking of hundreds of billions of forints of taxpayer loss as a baseline scenario in such an investment carried out the usual way.
12. Due to the high corruption risks present the investment's project implementation agreement needs amendments and modifications. In its current form, the project will be

implemented with significant corruption losses spread across many individually corrupt procurement processes.

13. Alarmingly, an inverse causal relationship between the corruption risks and the safe operation of the nuclear power plant can be observed. Higher levels of corruption will result in a lower level of security.
14. This relationship is exemplified by the recent Fukushima nuclear power plant accident. Corruption and misuse/abuse in the institutional control system are counted among among the causes of the accident.

#### Suggestions

15. Transparency is one of the best and most profitable weapons to use against corruption. Enforced transparency results in lower corruption risks. Ensuring transparency is necessary but not sufficient for the reduction of corruption. The optimal anti-corruption environment requires the presence and active participation of several actors: official institutions responsible for monitoring corruption risks in public expenditure, investigatory journalists, and the citizenry as a whole.
16. As more positive examples confirm, the creation of an institution independent of existing anti-corruption or compliance offices which continuously examines and monitors procurement decisions front to back, would go a long way towards mitigating corruption risks.
17. Only if the volume, financial, technical parameters of the planned power plant investment are taken into account alongside the characterization of markets, products and services involved during the investment can a proper preliminary assessment analyzing corruption risk be conducted. The results should be considered in the decision making processes of the investment.
18. This is essential, even if *a priori* good intention, willingness to compromise, fair business practices, a high level of contractual discipline are assumed in connection with each and every participant in the investment project.

#### Conclusions

19. A significant part of the corruption risks associated with an investment arises from several intrinsic and objective characteristics of the project. These factors are the following: the extremely high share of this investment (7-10%) of total annual investment in Hungary (i); information asymmetry resulting from the application of the new nuclear power plant technology (ii); implementation characterised by bilateral monopoly (iii); from the seller's side the contractor's oligopolistic situation (iv); within the investment the substantial amount of products coming from heterogeneous and non-competitive markets, (v); that Paks II. is

a relation-specific investment, since the implementation of the model is closely linked to its financing model(vi).

20. Only beyond the list of objective factors is it possible and necessary to talk about what institutional solutions, what organizational solutions are set up in the autonomous decision making process during the investment by the investment procurer, the Hungarian government, and the Russian partner, and what level corruption risks these institutional and organizational solutions would generate. Different choices for institutional solutions, for better or worse, will induce different levels of corruption risks throughout the entire project.
21. Consequently, the Hungarian government and its Russian partner could affect the level of corruption at which the investment is to be implemented. Those institutional and organizational solutions, strategic anti-corruption measures, continuous analysis of corruption risks that are based on the experiences of large-scale international investments can result in lower corruption risks linked to the investment, and in the exclusion of corruption in several fields. This all depends on the identification of the objective situation and on the political will to resolve the issue.