

Waste Management Projects in Emerging Markets: Risks and their Minimization

Tobias Faber and Maria Koliasta

1.	Characteristics of public private partnerships.....	28
2.	Project financing	30
3.	Force majeure	32
4.	Dispute resolution between the parties to a contract.....	36
5.	References	39

In the last few years, a significant growth has been observed in the global market of waste-to-energy (*WtE*) and it is anticipated to continue its steady growth until 2023 [23]. From a market perspective, Europe is still the largest market for *WtE* technologies, while the Asia-Pacific market is prevailed by Japan which utilizes up to sixty percent of its solid waste for incineration. Nevertheless, China witnessed the most rapid market growth in the period 2011 to 2015, which saw a two-fold improvement in its *WtE* capacity [23].

This expected growth would have a significant impact on the future of *WtE*, as more investors are likely to enter the market. Frequently, international *WtE* projects are tendered through public private partnership (*PPP*) schemes. As it will be illustrated below, a *PPP* is a cooperation between the public and private sectors by way of delivering a service or a project traditionally provided by a public entity. Some countries have implemented *PPPs* due to the lack of sufficient public services in the infrastructure or energy domains, fiscal deficit or budgetary constraints, while other countries adopted *PPP* schemes for the purpose of innovative technical know-how and operational efficiency [1].

Such *PPP* schemes are supplemented by a significant number of auxiliary agreements such as, inter alia, engineering, procurement and construction (*EPC*) contracts, operation and maintenance (*O&M*) agreements and power purchase agreements (*PPA*). The intricate nature of the aforementioned agreements, if they are inadequately drafted, may necessitate lengthy negotiations and lead to high participation costs. Thus, risk identification and management is of the utmost importance for both the public and the private parties. All of these agreements should take into account the peculiarities associated with the specific project.

The objective of this paper is to identify some of the most common critical characteristics and risk factors emerging in the development of *WtE* projects and contextualize them through the illustration of short case studies at the end of each chapter.

Essentially, the first section outlines the common characteristics of a PPP scheme as well as the importance of risk identification and allocation. The second section discusses the need for meticulous planning with regards to the financing methods in order to achieve the maximum desired result. The third and fourth sections respectively illustrate the concept of *force majeure* and how such a risk should be addressed and dispute resolution mechanisms that can assist in the settlement if adverse claims arise.

1. Characteristics of public private partnerships

PPPs are the main method for the realization of energy and infrastructure projects worldwide. PPPs can be defined as long-term agreements between public and private entities for the supplying of public services or assets traditionally carried out by the public sector and in which the private entity carries substantial risk and management accountability [2].

PPP procurement is one of various alternatives for procuring infrastructure. Consideration is commonly being given as to whether a project is well-matched to a PPP structure and whether there is a solid political encouragement for a PPP scheme. One of the core reasons for using a PPP structure is that PPPs make projects affordable. Under the PPP scheme, the private sector funds the project's construction and is reimbursed over time by a service charge from the authority, by revenues collected from the project, or a combination of the two. Thus, in a situation where the public authorities do not wish or cannot raise their direct levels of borrowing, PPPs will, usually, make the project realistic and affordable. Additionally, under traditional procurement, the private entity is responsible for ensuring the delivery of an asset in the agreed time and within budget. Conversely, PPPs require the private entity to deliver an asset within time and budget, ensure that those assets satisfy the service levels required by the public entity, maintain and renovate assets on an efficient basis so that services are always delivered at standards initially agreed upon over the long-term. PPPs, therefore, provide significant opportunities for the public sector to benefit from the private sector competencies [6].

A main feature of a PPP agreement is that it packages several project stages or functions together. However, the obligations that the private party assumes often vary, and can depend on the kind of service and asset involved. Common functions often consist of the following [2]:

- Design: PPPs require the design of the project from its initial conception so that it can successfully meet certain agreed outputs;
- Build, or restore: When PPPs are adopted for new infrastructure assets they generally call for the private party to build the asset and to take the risk of timely completion and interface. On the other hand, when PPPs concern existing assets, the private party may be responsible for restoring or extending the lifespan of the asset;
- Project finance: When a PPP deals with the building or restoration of an asset, the private party is generally also required to wholly or partially finance the necessary capital expenditure. As it is mentioned in the second section of this paper, lenders

are satisfied by the cash flow generated by the project. Hence, the ultimate goal in project financing is to secure a borrowing for the project which will be limited or non-recourse for the private party, while at the same time provides adequate credit support through guarantees to the lenders.

- **Operate and maintenance:** the responsibilities of the private party with regards to the operation can vary to a large extent, depending on the nature of the asset involved and service connected thereto. To illustrate, the private party could be responsible for the technical operation of an asset, supplying services directly to the customers. On the other hand, the private party could be responsible for furnishing support services while the public party remains responsible for the delivery of the service itself. With regards to maintenance, PPPs impute private parties with the responsibility of maintaining an infrastructure asset to meet a defined standard over the lifespan of the contract;
- **Transfer:** Some projects develop under a build-own-transfer (*BOT*) scheme. In such case, the public authority grants a private entity the right to construct and operate a project for a certain period of time. After this period, the project is transferred back to the public authority. The transfer may be at no cost or for value.

While national or international experience arms us with a valuable reference as to the structuring of the PPP projects, each PPP should address the specific project's own individual scheme and dynamic. Structuring a PPP project requires risk identification, allocation of rights, liabilities, responsibilities and risks to each party entering into the PPP agreement.

In the framework of a PPP, allocating risk signifies the allocation of responsibility of the parties to a PPP agreement. Each party should deal with the consequences of the risk that is assigned to it. A core principle of risk allocation is that each risk should be allocated to the party who can manage it most efficiently. Therefore, each risk should be allocated to the party who is the most capable to control the probability of the risk taking place [11]. To illustrate, the private party is generally in charge of the design of the project construction as it is more experienced in that field. Additionally, the risk should be allocated to the party who is better capable to control the consequences of the risk at the lowest cost by assessing, estimating and reacting to it. For instance, while no party can anticipate the risk of a flood, if the private party is engaged in the project construction, then it could utilize systems that would possibly minimize the destruction should a flood occur [9].

Case Study

In a PPP structure, a special purpose vehicle (*SPV*) will be created. The *SPV* is a legal entity that undertakes the construction, operation and maintenance of the project that needs to be delivered. Often, the project agreements are structured in such a way so as to enable the *SPV* to have only one contractual relationship with one of the contractors, which is often the *EPC* contractor, and not with all the contractors who participate in the construction, operation and maintenance of the project. As a result, the *EPC*

contractor assumes all the risks that flow from its contract with the SPV. In order to be released from all the risks, the EPC contractor will enter into several back-to-back agreements with its subcontractors.

The use of back-to-back agreements is common practice in international WtE projects. Through these agreements, the EPC contractor, or whomever entered into a contractual relationship with the SPV, seeks to pass down to his subcontractors the obligations and liabilities he assumed from his contractual relationship with the SPV.

There are, therefore, many advantages for such a contractor in implementing back-to-back agreements, but inadequate drafting of such agreements can give rise to complex and lengthy disputes.

2. Project financing

In a project finance transaction, an SPV would normally be set up by the investors exclusively for the purpose of carrying out the project. The SPV has no prior business record and it is purely carrying out the project by subcontracting most aspects through construction and operation contracts, as well as acting as a borrower under the financing agreements [7].

PPP projects are usually financed via project financing arrangements with lenders and investors. Project financing is a type of secured lending identified by complex, but balanced, risk allocation agreements. On the contrary to corporate lending where lenders are based on the strength of the borrower's balance sheet for their loans, in project financing lenders and investors cannot be based on such strength since, as mentioned above, the SPV has no prior business record. Rather, lenders and investors are paid back from the

cash flow generated by the project [10]. Thus, lenders and investors proceed with the financing of a project if the projected cash flow seems to be satisfactory and beneficial for them.

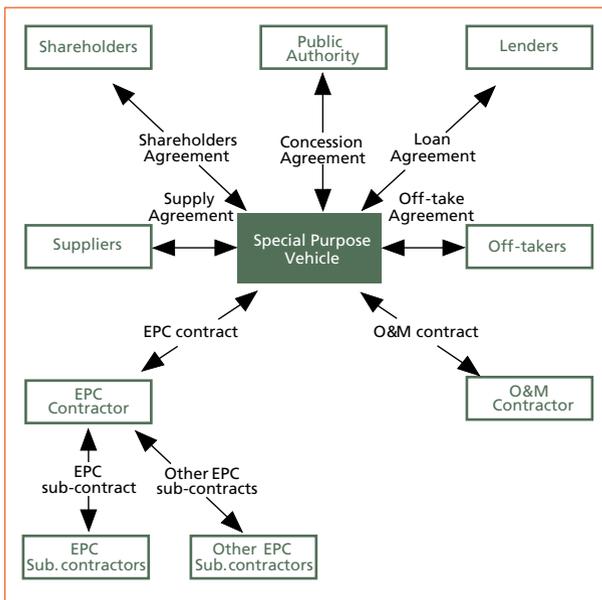


Figure 1:

Typical structure of a project finance scheme

Lenders and investors are seeking to realistically and effectively manage any possible risk in order to avoid exposing their capitals or investments to severe losses. The risks related to a project can differ from sector to sector and project to project. A number of general challenges apply to most projects in varying degrees. Between the numerous challenges that may be linked to project financing, some are related to the specific structure of the financing while others to the nature and technical soundness of the project itself, as well as to economic and political risks associated with the host country's vulnerable political or financial situation.

One of the essential characteristics of project finance and one of the key challenges to lenders is that the structure of it is limited recourse or non-recourse to the lenders. Particularly, the revenue generated by the project company is the main, if not the only, source of repaying the lenders. Thus, the contracting parties have to ensure the correct and timely construction of the project. During the early stages of the project, it is critical for the lenders to realistically align the proposed funding to the realities of the host country's market conditions. In addition, the lenders along with the investors and technical advisors, should conduct feasibility and other applicable research in order to assess how sound the project is, whether it can generate the initial estimated revenue, whether the project can be completed within the proposed budget and on time since time is essential in guaranteeing that the project company will meet its obligations under the various executed agreements. Similar studies should also be conducted on the operational and maintenance risks of the project [19].

As mentioned previously, the revenue generated by the project is the primary source of income for the repayment of the lenders. Hence, in a project finance transaction, lenders shoulder a high risk of not being repaid in case the project fails and/or produces insufficient revenue. Often, the lenders will seek to minimize the risk of non-payment by having the contracting parties set up a debt service reserve accounts. Such an account is being used as an additional security measure for the lenders. The objective of such account is to make a cash buffer available for situations where the existing cash on hand to be paid back to the lenders is less than the scheduled repayments [21].

Further, another risk that should be considered by the lenders and investors is that of currency risk. In cases where some of the project agreements, for example the power purchase agreement, are concluded in a different currency than the loan agreement, the contracting parties should then also consider currency inconvertibility, currency devaluations and exchange rates fluctuations. To illustrate, a WtE plant in Dubai may be financed in US dollars, but the revenue that needs to be paid back to investors is calculated in Dirham. That could result in an asset-liability currency mismatch in cases of currency devaluation or interest rate fluctuations. There are essentially two ways to mitigate such risks: Lenders can either obtain coverage for currency inconvertibility or enter into a swap. One of the common types of swaps is the interest-rate swap [15]. As mentioned above, project financing is the long-term financing of infrastructure and energy projects. Interest-rate variations represent a critical risk to highly-leveraged and long term financing. Hence, lenders and investors, usually, enter into an interest-rate swap agreement. In such an agreement, one party undertakes the duty to pay interest

on a floating-rate basis to one for payment at a fixed-rate. The other party does the converse. For instance, under the loan agreement between the SPV and the lender, the former may assume the obligation to pay interest at a floating rate. Then, the SPV should pay the lender the difference between the initially agreed upon fixed rate and the floating rate if the latter is below the fixed rate. In the case where the floating rate is above the fixed rate then the lender will credit the SPV the difference [17].

Case Study

In a project financing, lenders extend credit to a newly-formed SPV. Hence, the lenders face the risk that the SPV will not repay the loan received and, therefore, will lose the principal of the loan or the interest associated with it. From a lenders perspective, an important question that must be addressed is whether or not there is a debt assumption mechanism in place, whereby, the public authorities assume the debts in case of default of the SPV or in an early termination of the project agreements. If there is such a mechanism in place, it is important for the lenders to know if such an assumption of risk covers the full amount of the debt.

In WtE projects in some jurisdictions, the public authorities undertake to repay to the lenders a pre-defined percentage (often ninety percent) of the debt in case of early termination of the project agreements or in case of SPV's default sharing, thus, the risks with the lenders. Conversely, in such cases, many European countries adopted mechanisms via which the public authorities undertake to repay the full amount of debt provided by the lenders.

3. Force majeure

An unpredictable change in circumstances is one of the greatest difficulties the parties to long term contracts may face. For instance, natural disasters or changes of economic or political arena of the host country may considerably affect the basis of the contracts [13].

Most international business agreements include *force majeure* clauses. A *force majeure* clause is a provision that is used in contracts and relieves the parties to a contract from carrying out their contractual obligations if certain events beyond their control occur, resulting in performance becoming impracticable. The *force majeure* clause may specify that the contract be temporarily suspended or terminated in case the circumstance triggering the *force majeure* clause continues for a certain length of time [21].

There is no universally accepted definition of what kind of events needs to be included in a *force majeure* clause. Determining the list of circumstances to be included in a *force majeure* clause is critically essential and a matter of negotiation between the parties. In practice, an ordinary list of *force majeure* events often covers war, terrorism, fire, civil turmoil, strikes, foreign governmental actions impeding a party from carrying out its contractual obligations, embargoes, medical epidemics, floods, hurricanes, earthquakes and other abnormal weather conditions sometimes described as *acts of God* [8].

TONS OF ENERGY!

ENERGY GENERATION FROM RESIDUES: EFFICIENT & ECO-FRIENDLY.

Energy costs are continually rising. Making it all the more important for companies and municipalities to explore cheaper fuel alternatives for their energy supply.

We are experts in them: household and commercial waste, industrial residues and refuse derived fuels. And for many years now, we have been proving how they can be used in thermal recycling processes to produce useable energy for generating electricity, process steam and district heat.

For more information and references, visit:

www.standardkessel-baumgarte.com



STANDARDKESSEL BAUMGARTE - Power plants, plant operation and services for generating electricity, steam and heat from residues, primary fuels, waste heat and biomass.





BORSIG **SERVICE**

Power Plant Services

BORSIG Service GmbH, Berlin, offers comprehensive services for the power engineering, chemical and petrochemical industries as well as oil, gas and water supply. With more than 160 years of experience in the construction of steam generators, we offer the competence necessary for full-scale services in the field of energy and steam generation plants and systems.

Our services in detail:

- Repair, maintenance and modification work
- Ongoing maintenance
- Installation and dismantling
- Co-ordination of external contractors
- Performing measurements, analyses and acceptance procedures
- Supply of spare parts and replacement components according to third-party drawings or our own design
- Design of boiler modifications and retrofits with 2D and 3D CAD
- Overseeing boiler and power plant technology investment projects
- 24-hour standby service
- And NEW: our so-called „**BLITZMOBIL**“ - a fully equipped mobile workshop emergency van

Competent, quick and near to the customer - our efficient service and installation team makes this claim reality.

BORSIG Service GmbH

Egellsstraße 21, 13507 Berlin

Tel.: 030 / 4301-01

Fax: 030 / 4301-2771

E-mail: info@bs.borsig.de

www.borsig.de/bs



Apart from an indicative list of events triggering a *force majeure* clause mentioned in the above paragraph, such an event should have fallen outside the control of the contracting parties. The parties must establish that the event was not reasonably foreseeable and that they could not have prevented its consequences as the occurrence of such an event was completely beyond the parties' control. This is expected to develop into an increasingly difficult situation as any form of *imaginable* event can be arguably foreseeable [4].

While some contracts incorporate an exhaustive list of which events can be deemed as a *force majeure*, others include a catch-all provision encompassing a generic statement of what should be considered as *force majeure*. However, such generic clauses should be cautiously adopted. The way a court will interpret *force majeure* clauses varies from jurisdiction to jurisdiction. English courts used to narrowly interpret *force majeure* provisions. For instance, in *Tandrin Aviation Holdings Limited v Aero Toy Store LCC* [20], the sentence *any other cause beyond the Seller's reasonable control* was narrowly interpreted by the court, which concluded that in the context of that specific case, the aforementioned sentence was limited to the type of events specifically indicated in the *force majeure* provision. Hence, it is of utmost importance for the parties to a contract to specify in the *force majeure* clause what types of events could prevent them from performing their contractual obligations.

Given on the narrow and restricted interpretation that might be followed by the courts, it would be critical for the parties to customize their *force majeure* clause based on the particularities of the host country and incorporate in their contract a provision that explicitly records the specific circumstances of the transaction at issue that can trigger the *force majeure* clause.

Case Study

The ongoing diplomatic crisis between Qatar and its neighbors arouse public concerns since it complicates the performance of international contracts, especially considering the numerous construction projects in Qatar that are carried out by international contractors. Delivery of goods to Qatar has become more complicated, more time-consuming and therefore more expensive. An important question that needs to be answered is: Does this diplomatic crisis constitute *force majeure*?

In a situation like this, not all contractual obligations might become practically impossible; but rather, they may become more expensive and more time-consuming. Usually, *force majeure* covers only those events where performance is not only difficult but realistically impossible. The party invoking *force majeure* has to prove that there is a physical or legal reason why performance is strictly impossible. Since delivery of goods might become more cumbersome due to a diplomatic crisis but not strictly impossible, such crisis cannot most probably be considered a *force majeure*. However, investors affected by a diplomatic crisis which was not listed as an event triggering the *force majeure*, can possibly claim the protection under national laws.

4. Dispute resolution between the parties to a contract

Dispute circumstances are inherent to any PPP infrastructure projects and could impact the success and default of projects which in turn would generate extra costs for all parties involved. PPP construction project risks, complications, and disputes can arise in several circumstances, such as when technical, financial, legal, and logistical conflicts arise. Some complications developing throughout the lifetime of the PPP contract, particularly during the project's construction phase, cannot be resolved via established management mechanisms and will inescapably result in disputes. Hence, a mechanism to guarantee an efficient dispute resolution is necessary.

The efficient handling of PPP disputes requires a meticulous consideration of the dispute mechanism that should be put in place from the project's commencement and an individual assessment of each project's unique characteristics.

Several methods of alternative dispute resolution are commonly provided for in PPP contracts such as, *inter alia*, arbitration, litigation, expert adjudication, amiable settlement, mediation, conciliation. Their priority and structure may differ depending on the country and the sector. For the purpose of this paper, there will be an extended reference to arbitration since it is commonly used in construction contracts and a brief mention to litigation and mediation.

Arbitration has recently become one of the most commonly used methods of dispute settlements in PPPs project disputes. Arbitration is a means of alternative dispute resolution, meaning that the arbitration tribunal is not part of a country's or state's jurisdiction but a private institution. Nevertheless, the tribunal's decision, called the *award*, is legally binding for the parties to the dispute and enforceable in the domestic courts of the parties' states. Arbitration is often preferred in commercial disputes, particularly in cases where the contracting parties originate from different legal backgrounds [3].

Arbitration cannot take place automatically in case of a dispute between two parties to a contract. It has to be chosen explicitly and voluntarily by the parties as the preferred technique of dispute resolution. Usually, the contracting parties agree on arbitration and incorporate an arbitration clause in their contract, outlining the preconditions of bringing a claim before the arbitration tribunal and detailing the composition of the tribunal, as well as procedural questions, such as the official language and the governing law, among others. However, it is also possible for the contracting parties to agree on an arbitration clause after a dispute between the parties has arisen [16].

An arbitration clause can be elaborated, indicating the arbitration tribunal chosen, stipulating the number of and the nomination proceedings for the arbitrator, the seat of arbitration, the governing law of the contract, etc. On the other hand, an arbitration clause can also be brief leaving numerous procedural decisions up to the arbitrators [14].

Arbitration has to be differentiated from mediation. Mediation is another means of alternative dispute resolution, where a neutral third party is also assisting in resolving a dispute. Conversely to arbitration proceedings, the outcome of the mediation is not legally binding. A mediator assists the parties to resolve the dispute on the merits by proposing ways forward rather than by deciding on the claim unilaterally [12].

Further, arbitration has to be distinguished from litigation. Litigation is the classical means of resolving a dispute between two contracting parties, where the parties bring a claim before the competent court. While the parties can agree on some procedural aspects in advance, for example by deciding on the place of jurisdiction, procedural and substantive law is applicable according to the relevant state's law and no discretion is left to the parties [12].

With regards to international construction contracts, arbitration is often preferred over litigation for several reasons. Firstly, arbitration is far more flexible than litigation. Virtually, the parties can adapt the procedural rules according to their needs, for example with regards to the composition of the tribunal. A tribunal is composed of arbitrators who are either originating from different countries involved in the contract or from a third country, and who are – or might at least appear to be – more neutral and impartial. This applies not only to the judgment on the merits but also to procedural questions. Especially with parties from different legal backgrounds, the parties' expectations concerning document production and the taking of evidence can significantly differ. An arbitral tribunal is more aware of these different expectations than a national court that applies the law it always applies without questioning its legal approach [22].

Secondly, while a national court usually works in one of its official languages defined by law, the parties can freely choose the arbitral language when choosing arbitration, thereby assuring that neither of the parties would unduly benefit from disputing in their own language [12].

Thirdly, an arbitrator can be chosen by the parties for his technical expertise. It is often the case that disputes arise out of complex construction contracts, and a local judge usually lacks basic engineering knowledge and familiarity with international construction laws that is essential to effectively resolve that kind of disputes. However, this does not imply that an arbitral award is necessarily always more just or more technically tailored to the particularities of a construction contract than a court's judgment. In international arbitration, cases are sometimes decided on the basis of common justice rather than on strict adherence to the applicable contract laws or on narrow interpretation of the contracts [12].

Further, due to the 1958 New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards which provides for the enforcement of arbitral awards in more than 145 countries worldwide, arbitral awards are more quickly and easily enforceable than court judgments. However, not all aspects of construction projects may be arbitrable, e.g. when it comes to tax law, and that interim relief generally has to be thought via the means of litigation [5].

Nevertheless, it has to be noted that there is usually no right to appeal an arbitral award. This limited scope of judicial review of arbitral awards can be a risk for the contracting parties.

Lastly, there are a great number of arbitral institutions – i.e. International Chamber of Commerce (*ICC*), London Court of International Arbitration (*LCIA*), International Centre for Dispute Resolution (*ICDR*), China International Economic and Trade Arbi-

tration Commission (*CIETAC*) and so forth – across the world and each of them has its own rules. Some of the institutions are involved in disputes with a substantial tie to the country where the institution is located while others focus on disputes with specific subject matters. Whilst there may be some benefits or drawbacks for a party in using a specific set of rules, many of them are greatly interchangeable and can be chosen wherever the arbitration is going to take place. Nevertheless, depending on the set of rules selected, some amendments in drafting an arbitration clause would be advisable [18].

Case Study

The Russian public authorities expressed an interest with regards to further development in the WtE sector. Hence, investors who are planning to enter that market should consider how they wish to resolve any possible dispute that may arise. To this end, it is worth highlighting the court's decision in the Orlovsky Tunnel case. Essentially, the Commercial Court of the North-West Circuit declined to enforce a UNCITRAL award against the St. Petersburg Government in a dispute with regards to the Orlovsky tunnel concession agreement. In particular, an arbitration clause was incorporated in the concession agreement between the St. Petersburg Government (*grantor*) and the Nevskaya Concession Company (*concessionaire*) which stated that disputes between the parties should be settled by an arbitration tribunal located in Moscow but consisting of three arbitrators appointed by the ICC (Paris) in accordance with the UNCITRAL rules. The concessionaire filed an application for the arbitration tribunal since the grantor terminated the concession agreement beforehand the initially agreed termination date. The concessionaire received an arbitration award and applied to the Commercial Court of the City to acquire a writ of execution in order to enforce the arbitration award. However, the grantor moved to challenge this award. The court concluded that the arbitration clause incorporated in the concession agreement was invalid and, hence, refused to issue a writ of execution.

The reason why the court reached that conclusion was because the Federal Law on Concessions – (*law*) instead of hereinafter referred as law – governed the concession agreement. That law stipulates that disputes concerning concessions may be settled by courts, commercial courts or arbitral tribunals of the Russian Federation. The court interpreted that provision as referring to a domestic arbitral tribunal. However, as it is evident from the above, the parties in their concession agreement selected to settle their disputes through an arbitral tribunal located in Moscow according to the UNCITRAL arbitration rules while the ICC would be the appointing authority. However, that was not sufficient to make it an arbitral tribunal of the Russian Federation. Further, the court concluded that the arbitration clause is invalid because according to the Law, the rules should be the ones of a Russian arbitral institution and a Russian entity should act as an appointing authority.

5. References

- [1] ACCA: Taking Stock of PPP and PFI Around the World. 2012
- [2] Asian Development Bank (ADB); Inter-American Development Bank (IDB); World Bank Group; Public-Private Infrastructure Advisory Facility (PPIAF): Public-Private Partnership-Reference Guide (Version 2.0). 2014
- [3] Born, G.: International Arbitration and Forum Selection Agreements: Drafting and Enforcing. 1998
- [4] Bund, J. M.: Force majeure Clauses: Drafting Advice for the CISG Practitioner. 1998
- [5] Chartered Institute of Arbitrators: International Arbitration Practice Experience-Jurisdictional Challenges. 2014
- [6] epec: A programme Approach to PPPs – Lessons from the European Experience. 2015
- [7] Fight, A.: Introduction to Project Finance. 2005
- [8] Hoffman, S. L.: The Law and Business of International Project Finance: A Resource for Governments, Sponsors, Lawyers, and Project Participants. 2007
- [9] Hovy, P.: Risk Allocation in Public-Private Partnerships: Maximizing value for money. 2015
- [10] Journal of Business & Economics Research: Project Financing Versus Corporate Financing Under Asymmetric Information. August 2010
- [11] Liu, X.-p.; Wang, S.-q.: Risk Allocation Principles and a Framework for Risk Allocation of PPP. 2006
- [12] Mark Cato, D.: The Expert in Litigation and Arbitration. 2014
- [13] McKendrick, E.: Force Majeure and Frustration of Contract. Second edition, 1995
- [14] McIlwraith, M.; Savage, J.: International Arbitration and Mediation: A Practical Guide. 2009
- [15] Moody's Investors Service: Key Credit Risks of Project Finance. 1998
- [16] Moses, M. L.: The Principles and Practice of International Commercial Arbitration. 2008
- [17] Nevitt, P. K.; Fabozzi, F. J.: Project Financing. Seventh edition, 2000
- [18] Perales Viscasillas, P.: The role of arbitral institutions under the 2010 UNCITRAL Arbitration Rules. 2014
- [19] Principles of Project Finance, E.R Yescombe, second edition, 2014.
- [20] Tandrin Aviation Holdings Limited v Aero Toy Store LCC
- [21] Vinter, G. D.; Price, G.: Project Finance: A Legal Guide. 2006
- [22] Weintraub, R. J.: International Litigation And Arbitration: Practice And Planning. 2010
- [23] World Energy Council: World Energy Resources-Waste to Energy. 2016

Bibliografische Information der Deutschen Nationalbibliothek

Die Deutsche Nationalbibliothek verzeichnet diese Publikation in der Deutschen Nationalbibliografie; detaillierte bibliografische Daten sind im Internet über <http://dnb.dnb.de> abrufbar

Thomé-Kozmiensky, K. J.; Thiel, S.; Thomé-Kozmiensky, E.;
Winter, F.; Juchelková, D. (Eds.):

Waste Management, Volume 7
– Waste-to-Energy –

ISBN 978-3-944310-37-4 TK Verlag Karl Thomé-Kozmiensky

Copyright: Elisabeth Thomé-Kozmiensky, M.Sc., Dr.-Ing. Stephanie Thiel
All rights reserved

Publisher: TK Verlag Karl Thomé-Kozmiensky • Neuruppin 2017

Editorial office: Dr.-Ing. Stephanie Thiel, Elisabeth Thomé-Kozmiensky, M. Sc.

Janin Burbott-Seidel and Claudia Naumann-Deppe

Layout: Sandra Peters, Anne Kuhlo, Ginette Teske, Claudia Naumann-Deppe,

Janin Burbott-Seidel, Gabi Spiegel and Cordula Müller

Printing: Universal Medien GmbH, Munich

This work is protected by copyright. The rights founded by this, particularly those of translation, reprinting, lecturing, extraction of illustrations and tables, broadcasting, micro-filming or reproduction by other means and storing in a retrieval system, remain reserved, even for exploitation only of excerpts. Reproduction of this work or of part of this work, also in individual cases, is only permissible within the limits of the legal provisions of the copyright law of the Federal Republic of Germany from 9 September 1965 in the currently valid revision. There is a fundamental duty to pay for this. Infringements are subject to the penal provisions of the copyright law.

The repeating of commonly used names, trade names, goods descriptions etc. in this work does not permit, even without specific mention, the assumption that such names are to be considered free under the terms of the law concerning goods descriptions and trade mark protection and can thus be used by anyone.

Should reference be made in this work, directly or indirectly, to laws, regulations or guidelines, e.g. DIN, VDI, VDE, VGB, or these are quoted from, then the publisher cannot accept any guarantee for correctness, completeness or currency. It is recommended to refer to the complete regulations or guidelines in their currently valid versions if required for ones own work.