Introduction

Waste management situation in low income and emerging countries is mostly on a poor level, yet. The major reasons for the little progress during the last decades are significant demands in technical knowledge and political commitment, what generally results in a crucial under financing of waste management activities. To achieve significant improvements it is essential to develop effective, reasonable technical solutions and to balance them with the financial means. Technical measures should aim on optimizing both environmental and economic benefits. Most recent developments proved that additional revenues may be obtained most likely from advanced recycling activities, from appropriate waste treatment techniques like MBT and from CDM. In most cases, CDM revenue contribution to overall project costs is limited, just landfill gas projects (LFG) show a significant portion, particularly for large landfills. However, most of those projects have already been contracted by carbon investors; therefore focus should be given on alternative CDM activities in waste management. This paper highlights the options in general and introduces an interesting case study from China.

Clean development mechanism

Generally waste management activities generate Greenhouse Gases, both methane (landfills) and CO₂. Therefore, improvements in waste management may result in significant reduction of GHGs. According to data from German Federal Ministry of Environment 25 % of total methane emissions in Germany are related to landfills. Between 1990 and 2004 numerous measures like landfill closures, reduction of waste for disposal and utilization of landfill gas have been implemented in Germany. In total methane generation has been reduced by 21 Mio. Mg CO₂eq, what is equal to 50 % of the reduction goals of German industry between 1998 and 2012 (45 Mio. Mg). The ministry still has identified a reduction potential of another 12,4 Mio. Mg CO₂eq just in German waste management. Considering the poor technical level of the waste management systems in low income countries, it seems obvious that the potential for emission reduction is huge.

Climate relevant waste management projects may be registered as emission reduction projects, according to the regulations of the UN-Framework Convention on Climate Change. Beside the political-symbolic aspect this measure has also significant economic criteria. CERs (Certified Emission Reductions) are to be produced and sold to the international market, to lift the total profitability of the project over a critical investment threshold. The legal basis of Certified Emission Reduction (CER) trading is the Article 12 of the Kyoto Protocol, called the Clean Development Mechanism (CDM). The CDM mechanism allows industrial nations to meet their quantitative reduction goals for greenhouse gas emissions by carrying out emission reduction projects in developing countries. The trading market for the CERs is basically governed by European legislation and its conversion to the member states. Particularly the EU emission trading system with its
participants from energy-intensive enterprises and power plants offer the opportunity to pool the CERs
into the EU-system and to sell them to other participants. The Federal Republic of Germany
administrates the national conversion of the EU guidelines by the Projekt-Mechanismen-Gesetz
(ProMechG, Project-Mechanism-Law). The law permits operators of large power plants to cover up to
22% of the granted emission rights in the period 2008-2012 by emission certificates from Kyoto
projects. That corresponds with approximately 90 million tons of CO₂-equivalents per year in
Germany.
In accordance with Article 17 of the Kyoto protocol CERs from climate protection projects may be
also subject to national purchase programs of countries, which may accomplish a part of their
obligations to reduce greenhouse gas emissions. States like e.g. the Netherlands, Austria, Japan or
Spain are strongly involved with national purchase programs from CDM projects. Currently CERs
from CDM projects are traded in the European Union market and in national purchase programs for
approx. 8-10 € per ton CO₂-equivalent, on basis of future delivery obligations (forward contracts). A
third option for carbon trade is provided by the voluntary market for the compensation of CO₂-
emissions. By investing in emission certificates from climate protection projects, unavoidable
emissions may be compensated and neutralized, like for flights, fair meetings or production
enterprises. The price is self regulated by the market and reflects the quality of the projects and the
demand of the market.
Within the validation process the emission reduction process will be monitored, validated and finally
certified. For the approval as a climatic protection project it requires several steps involving various
institutions. The process opens with compiling a draft report, the so called PDD (Project Design
Document). The PDD explains how and in what amount the greenhouse gases are going to be reduced.
Beyond the technical concept other project-relevant aspects such as additionality, sustainability,
environmental impact and socio-economic benefits are addressed in the PDD. One important element
of the PDD is the monitoring concept, which facilitates how real greenhouse gas reductions during the
lifespan of the project later will be determined. The project presented in the PDD must be officially
validated by an independent UN-accredited institution (a so called DOE, Designated Operational
Entity). At the same time the host country is requested to approve the project. After the validation by
the DOE and the „Kyoto permission” of the host country’s authorities the project can be submitted for
registration at the UNFCCC. A registration is finalized automatically after 8 weeks, if no veto is
inserted by the expert panel of the CDM executive board.
Generally, CDM projects may be acknowledged and registered only in case the meet the so called
additionality-criteria. In order to prevent from “stick-in effects”, it must be ensured that the designed
project faces certain barriers, which would not be overcome without the CDM implementation. The
additionality can be proven economically (e.g. lack of profit) or by outlining technical barriers.
After establishing the MBT-plant, the real avoided emissions will be measured and calculated as
determined in the approved monitoring concept, then verified by a further DOE and registered as
CERs at a temporary account of the UNFCCC. Then the CERs can be transferred to accounts of
international buyers.

**Project types**
In waste management are two large groups of potential CDM projects:
- Directly reduction of the generation of methane
- Improvements in energy efficiency
There are a number of measures to improve the energy efficiency of waste management activities,
such as material recycling instead of energetic reutilization or substitution of fossil energy resources
and so on. Compared to direct methane reduction those measures are technically more complex and
economically less reasonable. Most activities take place in industrial countries. Direct reduction of methane generation or emission shows a significantly larger potential for CDM due to the poor present emission situation. Basically 4 different project activities may be attractive for CDM:

- Gas extraction and flaring/recovery for old, existing and new landfill sites
- Methane avoidance due to mechanical biological pre-treatment
- Methane avoidance due to composting activities
- Methane avoidance due to methane oxidation of residual emissions from old landfills

For all components except the last one consolidated methodologies are available from UNFCCC. For the methane oxidation a new methodology is expected to be registered at UNFCCC in the near future. Since there is a quick progress in developing CDM methodologies, more project ideas may be expected.

**Landfill gas projects**

LFG projects were the first CDM projects in waste management at all. One reason is that LFG projects promised to be highly reasonable with significant revenues from CER trading contributing to up to 80% of total project costs. Meanwhile LFG projects are state-of-the-art; all landfills in metropolitan areas are object to contracts and purchase agreements. However, all LFG projects under perform. From 13 early registered projects, 7 obtain less than 60% of the expected reductions, the other 6 less than 30%. It does not require extraordinary technical excellence or expensive western experts to compile a LFG CDM-project. The procedure may follow the consolidated UNFCCC methodology ACM0001. However, getting a project approval from UNFCCC does not necessarily mean CER revenues, because at first the gas needs to be extracted from the landfill. And this may become a tough task, particularly in tropical countries.

![Fig. 1: MBT pilot plant Phitsanoulak (Thailand)](image-url)
Composting and mechanical biological treatment (MBT)
Uncontrolled methane emissions that would occur at a waste disposal site are avoided by the biological stabilization of the waste. Stabilized biomass (SB) does not (or to a smaller extent only) turn into anaerobe condition when disposed to a landfill. Hence, the methane generation and emission will be significantly smaller. The following case-study for a MBT plant in Gaobeidian (PR China) illustrates the technical and administrative measures and procedures to make a MBT a CDM project.

In summer 2006 AWN Umwelt GmbH based in Buchen (Germany) and the Municipality of Gaobeidian decided to launch a project for the improvement of the waste disposal in Gaobeidian. In a first step the technical, economic and legal conditions were examined in a feasibility study. The feasibility study was financially supported by the PPP facility of the KfW Entwicklungsbank (development bank), an endowment fund for the support of public private partnership projects. The technical and administrative execution of the study has been contracted to the department of waste and resource management of the Technical University Braunschweig, headed by Professor Klaus Fricke. The study was finalized in late 2007; the construction of the treatment facilities may begin this year, yet.

The technical investigations of the study consist of several components. At first, the waste generation and waste composition were examined. The city cleaning department of Gaobeidian is collecting approximately 50,000-60,000 t waste per year, most of it within the city’s boundaries. The collection is carried out by means of various collection systems, predominantly by underground drop-off containers and by multiple-chamber containers that are located at the roadside. The disposal site is near to the city. The waste disposal facilities are on the lowest technical level. The disposal site is in an exploited clay pit and has no technical barriers. The disposal procedure is uncontrolled. Dozens of waste pickers are irregularly working on the site.
The composition of the waste was determined by assorting a 250 kg sample. The sample was screened by 40 mm and 10 mm sieves. The sieve overflow was sorted by hand into fractions of materials. The particles that passed the 10 mm sieve have been examined in the laboratory. Table 1 shows the composition of the fraction >10 mm, which amounts to approximately 55% of the waste mass.

<table>
<thead>
<tr>
<th>Material group</th>
<th>Portion [mass %]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic</td>
<td>28 %</td>
</tr>
<tr>
<td>Plastic foils</td>
<td>8.5 %</td>
</tr>
<tr>
<td>Coal</td>
<td>8.5 %</td>
</tr>
<tr>
<td>Stones</td>
<td>5 %</td>
</tr>
<tr>
<td>Paper</td>
<td>3 %</td>
</tr>
<tr>
<td>Textiles</td>
<td>1.5 %</td>
</tr>
<tr>
<td>&lt; 10 mm</td>
<td>45.5 %</td>
</tr>
</tbody>
</table>

Table 1: Composition of the waste

Plastic bottles, metals, paper, glass bottles and wood were not found. Concerning the biological treatment the portion of the organics as well as potential disturbing materials are particularly of interest. In the fraction < 10 mm the organic portion is 16%, measured as loss on ignition. Thus the entire organic portion amounts to approximately 35% weight, significantly less than the common value for developing countries, which is some 50-70 mass%. Disturbing materials were not found in the waste. Even the coal ash showed a low level of pollution. The ash originates from combusted coal elements used at simple cooking places.

The suitability of biological treatment procedures under the specific boundary conditions (local situation, climate, waste composition) was examined in three different pilot plants. One was a so
called chimney effect system (passively aerated). The other systems were actively aerated treatment systems, one for biowaste (green waste) and one for MSW.

![Fig. 4: Actively ventilated residual waste heap](image)

The comparison of the parameters of biochemical stability proves the effect of the degradation process in the active ventilated residual waste heap. The oxygen respiratory of the input material measured as \( \text{AT}_{4} \) (respiratory within 4 days) amounted to 25 mgO\(_2\)/kg, while the loss of ignition was 18% and the TOC 8%. Table 2 shows the development of the parameters over the treatment period. It clearly demonstrates that the residual waste is widely stabilized after 14 days treatment period, only. The results match the limits of the German legal regulations.

<table>
<thead>
<tr>
<th></th>
<th>Input</th>
<th>after 14 days (active)</th>
<th>after 6 weeks (active)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>13.10.06</td>
<td>2.11.06</td>
<td>13.12.06</td>
</tr>
<tr>
<td>( \text{AT}_{4} ) [mgO(_2)/kg]</td>
<td>25,2</td>
<td>1,9</td>
<td>0,91</td>
</tr>
<tr>
<td>loss of ignition [mass %]</td>
<td>18,1</td>
<td>14,2</td>
<td>14,3</td>
</tr>
<tr>
<td>TOC [mass %]</td>
<td>8,2</td>
<td>5,1</td>
<td>5,2</td>
</tr>
<tr>
<td>TOC eluate [mg/l]</td>
<td>639</td>
<td>160</td>
<td>270</td>
</tr>
</tbody>
</table>

Table 2: Parameters of biochemical stability - actively ventilated residual waste heap

Regarding the total mass of converted organic material, the result was unsatisfactory due to the small input ratio. For a large scale application the high amount of non-organic waste components is less suitable for a biological treatment, regarding both the operation costs and the CDM emission
reductions. Therefore a pilot test was initiated for biological treatment of bio-waste.

Since neither a separate bio-waste collection at the households nor a collection at the collection points was feasible, a bio-waste acquisition campaign was realized at the dump site. During a period of 5 weeks the bio-waste was purchased and has been put immediately on the composting heap. Larger quantities of bio waste were delivered when the purchase rate exceeded 6 €/t. Thus an economical benchmark for the separate bio-waste collection was identified.

Fig. 5: Delivery of bio waste by waste pickers

Based on the technical assessment, the establishment of an actively ventilated residual waste heap was proposed aiming on biological stabilization prior to landfilling as well as the production of compost. Simultaneously, the organic portion shall be increased by means of waste management measures. The facilities will be engineered by engineering company Pöyry-IGW (Witzenhausen, Germany). The MBT plant will be designed for a treatment capacity of 40,000 t/year. Recyclables and disturbing material will be segregated manually. After shredding the biological treatment takes place in heaps. Total treatment duration will be eight weeks. The MBT plant outputs stabilized biomass with an amount of approximately 27,000 t/year. The output material may be deposited or may be used as methane oxidation layer or compost.

The CDM application for the MBT Gaobeidian has been compiled in co-operation with a CDM expert of the GreenStream Network GmbH. Contents and form of the PDDs depend on the sector and the size of a project. The applied methodologies (AM0025), the PDD template, its guidelines to fill in, as well as calculation tools can be downloaded on the Website of the UNFCCC.

The compiled Small Scale PDD consists of the following main topics:
- A description of the project with its effect for climate and sustainable development;
- Determination of the reference scenario without the project (baseline);
- Calculation of the baseline emissions, project emissions and emission reduction which can be expected (ex-ante);
- Monitoring concept with calculation methods for the verification of the real greenhouse gas reductions based on measurements (ex-post);
- Demonstration of the project additionality;
- Environmental impact analysis including local stakeholder’s comments.

The methodology AMS III.F (Avoidance of methane production from decay of biomass through composting) provides the base of the baseline study and the monitoring concept for the Gaobeidian project. For calculations a useful tool is separately available, the „Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site”.

In the greenhouse gas balance of the entire project, the emissions which result from the project activities are considered as a negative impact. Total CO₂ emissions of engines and electric machines are summarized and balanced with the baseline emissions, which are the avoided CH₄-emissions from the waste disposal. The calculation algorithms for both scenarios - baseline and project – are to a certain extent determined by the existing methodologies and tools. For the calculation of the virtual methane emissions due to waste disposal, a biological degradation of the deposited waste is simulated over several years by a layer model. With this model the highest methane emissions in a layer emerge during the first years and decrease in the subsequent years. Table 3 illustrates the preliminary calculation of the emissions for the MBT project Gaobeidian for a period of 10 years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Project emissions [t CO₂eq]</th>
<th>baseline emissions [t CO₂eq]</th>
<th>Emission reductions [t CO₂eq]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>497</td>
<td>2339</td>
<td>1842</td>
</tr>
<tr>
<td>2009</td>
<td>537</td>
<td>4376</td>
<td>3839</td>
</tr>
<tr>
<td>2010</td>
<td>577</td>
<td>6156</td>
<td>5579</td>
</tr>
<tr>
<td>2011</td>
<td>616</td>
<td>7714</td>
<td>7097</td>
</tr>
<tr>
<td>2012</td>
<td>655</td>
<td>9081</td>
<td>8426</td>
</tr>
<tr>
<td>2013</td>
<td>694</td>
<td>10284</td>
<td>9590</td>
</tr>
<tr>
<td>2014</td>
<td>732</td>
<td>11345</td>
<td>10613</td>
</tr>
<tr>
<td>2015</td>
<td>770</td>
<td>12283</td>
<td>11513</td>
</tr>
<tr>
<td>2016</td>
<td>807</td>
<td>13114</td>
<td>12306</td>
</tr>
<tr>
<td>2017</td>
<td>845</td>
<td>13852</td>
<td>13007</td>
</tr>
<tr>
<td>Total</td>
<td>6729</td>
<td>90541</td>
<td>83812</td>
</tr>
</tbody>
</table>

Table 3: Emission calculations of the MBT Gaobeidian

The forecasted generation of emission certificates amounts to 83,812 t CO₂-equivalents for the project period 2008-2017. Presently, due to Kyoto regulation certificates are only tradable until 2012. In this period CERs of 26,783 t CO₂-equivalents may be generated. Based on current rates, CDM revenues 210,000 and 250,000 € may be expected. The calculations of benefits represent an estimation based on the emission reductions which are expected. Real revenues may differ clearly depending on the plant capacity, the waste composition and on the trading rate of the certificates. In the context of the monitoring process, all data that were used for the calculation of the emissions, if not constant, have to be determined or measured ex-post, in order to obtain the actual emissions during the lifetime of the
project. Data comprise of e.g. the power and fuel consumption, as well as the waste composition, which has to be monitored several times in the year.

**Methane oxidation layer**

A methane oxidation layer (MOL) is placed on top of an existing dumpsite in order to turn methane emissions passing through the layer into CO₂. From this point of view a MOL has the same effect as a LFG system (collection and flaring/oxidation). However, the emission reduction can not determined in the same matter like with LFG projects, because the amount of methane oxidized in the MOL can not be monitored directly (like in a LFG project next to the flare). Just an indirect monitoring might be possible. Therefore, the central parameter describing the gas generation (and flux) as given in the baseline formula of the UNFCCC-tool may be monitored at two different locations, one with and one without MOL. The general concept for the MOL verification is not to rely on virtual emissions (from model calculation) but to monitor the baseline emissions in a testing area.

MOLs can be constructed using SB or compost or similar blended materials. Therefor, it is easy to combine a MOL and a MBT project. Total CDM revenues from MOL may be small, but maintenance and operation costs for a MOL are heading towards zero, what makes it generally reasonable.

**Conclusion**

A number of waste management projects are eligible under CDM. The CER exploitation of LFG projects is higher than those of MBT, although in MBT plants more organic carbons are turned into CO₂ (instead of decomposing to CH₄) than in landfills. This point is subject of controversial discussion particularly regarding the sustainability (which is much better for MBT) and the technology transfer effects (same). However, according to current methodologies CER contribution to MBT projects is still small threatening the additionality of those projects. Nevertheless, a project developer should generally consider adjusting the plant concept in order to maximise CDM revenues.
Legal Requirements on International Waste Disposal Business

Abstract

Waste disposal contracts and waste disposal organization contracts, agreements with general contractors and subcontractors, contracts for services and work, consortium agreements, etc. provide the legal basis for managing an international waste disposal business. Given the special nature of international business, this report illustrates the contractual changes that are necessary, among others: how to manage the applicability of different legal systems, how to deal with foreign administrative requirements, how to structure acceptance and warranty procedures, and how to ensure payment. This discussion also draws on insights into international business contract law and refers the reader to appropriate standard-form contracts that can be used as a checklist when drafting agreements for international business transactions.

1. Legal Management

1.1 Language

The negotiating language for most foreign business transactions is English. This not only applies to the Anglo-American sector, but is also predominant in eastern Europe, the Middle East and Far East. The language of negotiation between German and Spanish-speaking partners is often also English. Exceptions are the francophone areas of the Middle East and western part of Africa. As a rule, the language of negotiation there is French.

The consequence of this is that both delegations should have a command of the respective negotiating language that enables them to conduct negotiations. In this it is possible that the negotiating delegations employ staff that are more or less equally proficient in both languages, that is to say, the respective native language and the language of negotiation. Such a linguistic capacity helps to ensure that possible misunderstandings are clarified more easily in the early stages of negotiations.

1.2 Interaction

The manner in which the foreign business partner is treated in the course of negotiations is also of central significance for achieving commercial goals in foreign business. Naturally, behaviour in foreign business is sometimes different to that in domestic transactions, with the expression "When in Rome, do as the Romans do" also applying here.

In order to acquire an awareness of negotiations in foreign business, the following example should be noted: contractual negotiations between business partners sometimes involves the following behaviour, which is more widespread in the USA than in other countries: own proposals that are made are challenged by the counterpart in an open discussion, in order to determine the steadfastness of the other party in an encounter. The doubts about such a negotiating style become apparent at the latest when the position of strength is not evident to the degree that the business partner can justify acting in such a way. Treating business partners in this manner may lead to a breakdown in negotiations that may have been successfully concluded if another approach had been taken. This applies in particular for negotiations in Asia, where the European concept of "saving face" is particularly strongly pronounced.

1.3 Level of Detail
A central problem for the legal management of foreign business is that a large portion of the business takes place in another country, under the legal conditions prevailing in that country. These legal framework conditions - and especially their practical implementation - such as legal protection from the courts, are often relatively impenetrable to foreign businessmen. The attempt to stipulate the validity of German law and German jurisdiction often fails, not only due to positions of power, but also due to a veto on the part of the foreign partner, due to the fact that they consider German law and its implementation to be equally impenetrable. As a consequence, in the legal management of foreign business the prevailing circumstances have long been that the business partners create their own legal framework. This works in most countries as, similar to the case in Germany, the parties are largely free to create their own rules (legal autonomy), at least within the field of international commercial law.

However, the consequence of this is that, within the scope of the legal management, the entire transaction with sundry complex rights and obligations regarding technical, organisational and personnel matters must be laid on the negotiating table, a situation that requires highly precise preparations and a high degree of detail. The success of legal management is bound to the extremely precise recognition and solution of problems at the interfaces between the areas of performance of different business partners.

The high level of detail required should be maintained throughout, from the tender stage to implementation, as limitation of risk is subsequently recognizable to a certain extent from the tender calculation stage. If this is not the case, there is a risk that the business partners will come under pressure. On the other hand, if a contractual agreement is reached in the tender stage without sufficiently detailed terms for implementation, then the contracting parties may come under pressure when the order is awarded and complicated details then need to be agreed upon, often under pressure of time, with the result that contractually unsatisfactory conditions may arise. A complete evaluation and regulation of sundry risks should be performed at the beginning of the co-operation, and prior to entering into a binding contractual situation.

2. Contractual Peculiarities

2.1 Language of Contract

It is desirable - but not always achievable - that parties to a contract in foreign business agree upon a contract language that is understood by all contracting parties, where possible. If the contract is drafted in a number of languages, then the parties must agree on which of the various languages is to have priority in the event of contradictions in the different versions. The negotiating language may differ from the language of contract.

If the contractual partner sends a draft in a foreign contractual language, this contract is usually translated into German, in order to be able to obtain a precise assessment of both legal and factual content. The translated draft is reworked in German, with the reworked sections consequently translated back into the language of contract. This may result in a not inconsiderable amount of translation being required, although this is justified in most cases as it means that misunderstandings on the part of those individuals reworking the contract can be largely eliminated.

2.2 Standard Contracts

The content of standard contracts for international economic agreement law may be used for foreign business contracts. However, it is not advisable to adopt this completely as they do not meet the
specific legal requirements of the business transaction concerned. Standard contracts are consequently used primarily as checklists, to be worked through in contractual negotiations in order to create a comprehensive agreement regarding the foreign business transaction.

To the extent that waste management facilities are the scope of the foreign business, the standardised contractual terms for the international plant business may be utilised, drawn up by FIDIC (Fédération Internationale des Ingenieurs - Conseils, international association of consulting engineers(Silver Book (1), Red Book(2)). The fact that these contract forms contain the entire scope of supply and performance required for the construction of a typical plant (Subcontract for Works (3), Agreement for external Consortium (4)) means that many aspects of the business in waste management technology are also covered.

In the case of special technical or organisational matters regarding waste management projects abroad, specific German plant contracts regarding corresponding waste management facilities or waste management organisation contracts may be used as the basis for drawing up contracts in foreign business.

2.3 Memorandum of Understanding

If, during the course of the negotiations between the business partners, commercial intentions become more specific, then it is common in foreign business transactions for the negotiation level that has been achieved to be laid down in a Memorandum of Understanding, or Letter of Intent. Regardless of which term is used, the purpose of these is to state that the intended transaction is not yet concluded, but only prepared. The business partners wish to specify a number of issues in order to be able to continue with the contract negotiations, whilst at the same time keeping their binding commitment to a minimum.

2.4 Articles of Association

When conducting foreign business it is usually advisable to establish a local subsidiary. The major problem that establishing subsidiaries of German companies abroad entails is that the parent company retains complete influence over the foreign subsidiary. From a corporate law viewpoint, this means that the German parent company must hold 51% of the foreign subsidiary. In many countries this is contradictory to the prevailing corporate law, whereby foreigners may hold a maximum of 49% of a company. In many cases this problem may be solved by the German parent holding only 49% of the foreign subsidiary, but with a further 2% held by a local lawyer in trusteeship for the German parent company. This 2% of the foreign subsidiary consequently heeds the instructions of the German parent company, with the parent company therefore able to exercise control of the foreign subsidiary with its 49% stake.

2.5 Selected Contractual Terms

It is important to precisely stipulate which administrative requirements exist with regard to the subject matter of the contract and who is to assume these obligations. Administrative requirements include taxes, customs, other payments in relation to the project, import and export permits for material and construction site facilities, procurement of the construction site and the provision of utilities, employment requirements and work permits for German or foreign staff, together with possible reasons for dismissal.
The difficulty in establishing an overview of loss or damage in foreign business and the limited possibilities to insure against these means that contractors agree liability limitations for indirect damage or consequential damage. A problem that remains in this respect is the question of how indirect damage can be differentiated from direct damage, which is generally subject to liability. This problem is sometimes solved by listing examples of different types of possible indirect damage within the contract. In addition, a number of different types of insurance cover are taken out for possible damage.

Performance is often also provided by sub-contractors. This becomes problematic where the sub-contractor is appointed by foreign customers. If the contractor does not agree to the appointment of a sub-contractor appointed in this manner, then it is advisable to at least agree upon a contractual release of the contractor from the liability of the appointed sub-contractor. This problem is particularly evident in developing countries in which customers wish to appoint local, but often inexperienced sub-contractors.

As far as the acceptance of performance is concerned, foreign business transactions often use the agreed form of "provisional acceptance" and "final acceptance". The "provisional acceptance" refers to the general condition and fundamental functional capability of the project, with the guaranteed performance values - the non-achievement of which is generally linked to fixed reduction in price - examined in conclusion in the scope of the "final acceptance". This regulation is a proven conflict resolution tool, as disputes involving defects can be reduced prior to the "provisional acceptance" via guarantee servicing on the part of the contractor.

The Letter of Credit (L/C) is often used as security for the contractor to ensure the requisite payments of the customer in foreign business transactions. In the Letter of Credit the bank of the customer, under its own liability, commits itself to perform the agreed payment to the contractor on receipt of specified documents. As the bank assumes this payment obligation on the part of the customer it is only prepared to instigate a Letter of Credit where the customer disposes of an adequate line of credit. Typical foreign risks involving payment may be covered by the Federal Republic of Germany, in the form of so-called Hermes coverage.

The principal problem entailed in contractual amendments is the question of whether the requested amendments or additional performance will result in added cost for the customer, or whether such performance still constitutes part of the agreed contractual obligations. It is important to incorporate an obligation to renegotiate, together with specification of written form for amendments and supplements, in order to keep such problems to a minimum.

For international contracts it is advisable to agree upon an arbitrator, for two specific reasons: due to a lack of reciprocity it is difficult in international law to enforce the acknowledgment and execution of judicial rulings of one state in another state, whereas arbitral awards are secured by a number of international treaties. In addition, the process is generally accelerated, due partly to the fact that arbitration avoids the problems of national notification.

3. Perspective

Foreign business is a new challenge for the waste management industry as far as legal management and contractual form is concerned. The introduction of advanced German waste management technology abroad brings with it a number of different tasks, the focus of which lie less in technical aspects than in the organisational procedures and interlocking of a range of performance factors of
waste management projects. A further new aspect is the legal layout of such transactions abroad. On the one hand, the wealth of decades of proven legal procedures and experience from domestic waste management law and international commercial law can be incorporated. Problems otherwise occurring in the legal management of contractual layout of foreign waste management transactions have been partially resolved or are in need of resolution.

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