



REPORT OF THE NICOLE WORKSHOP

Financial Aspects of Site Restoration with an Emphasis on Central and Eastern Europe

6 - 7 November 2002

Budapest

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c/o r³ Environmental Technology Limited
www.r3environmental.com**

NICOLE (*Network for Contaminated Land in Europe*) was set up in 1995 as a result of the CEFIC “SUSTECH” programme which promotes co-operation between industry and academia on the development of sustainable technologies. NICOLE is the principal forum that European business uses to develop and influence the state of the art in contaminated land management in Europe. NICOLE was created to bring together problem holders and researchers throughout Europe who are interested in all aspects of contaminated land. It is open to public and private sector organisations. NICOLE was initiated as a Concerted Action within the European Commission’s Environment and Climate RTD Programme in 1996. It has been self-funding since February 1999.

NICOLE’s overall objectives are to:

- Provide a European forum for the dissemination and exchange of knowledge and ideas about contaminated land arising from industrial and commercial activities;
- Identify research needs and promote collaborative research that will enable European industry to identify, assess and manage contaminated sites more efficiently and cost-effectively; and
- Collaborate with other international networks inside and outside Europe and encompass the views of a wide a range of interest groups and stakeholders (for example, land developers, local/regional authorities and the insurance/financial investment community).

NICOLE currently has 146 members. Membership fees are used to support and further the aims of the network, including: technical exchanges, network conferences, special interest meetings, brokerage of research and research contacts and information dissemination via a web site, newsletter and journal publications. NICOLE includes an Industry Subgroup (ISG) – with 27 members; a Service Providers Subgroup (SPG) with 33 members; 70 individual members from the academic sector/research community; and 16 members from other organisations, including research planners, non-profit making organisations, other networks, funding organisations. Some members are involved in both the ISG and the SPG. For further general information, further meeting reports, network information and links to contaminated land related web sites, please visit NICOLE's web site: www.nicole.org

Membership fees are currently 3,500 EURO per year for companies (1,750 EURO for smes), and 150 EURO per year for academic institutions. For membership requests please contact:

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Executive Summary

Technical issues are usually a dominant element of dealing with contaminated sites and NICOLE workshops have to date focussed on this aspect of the problem. In practice, problem-holders also have financial or commercial decisions to make. NICOLE, as a Network, is always looking to expand the range of topics related to contaminated land as well as to enlarge its geographic reach across Europe. Consequently, NICOLE held a workshop focussing on the financial aspects of site restoration, with an emphasis on Central and Eastern Europe (CEE), over 6th to 7th November 2002 in Budapest Hungary.

The first day highlighted speakers from Central and Eastern Europe, including law firms, service providers and banks working in CEE countries in land remediation and redevelopment. The second day focused on financial aspects, including talks about venture capital and other approaches to buying and redeveloping contaminated land for profit. Other talks discussed the industry and service provider views on the way contracts are now written, the way indemnities and insurance are applied, the effect new accounting standard will have on setting aside environmental provisions, and how real estate value and due diligence are factored into transactions.

Discussion

Many delegates felt that the expansion of NICOLE's meetings both to the countries of Central and Eastern Europe (CEE Countries) and to wider topics such as financial risk management were worthwhile developments. The CEE candidate countries set to join the European Union over the next few years are faced with an enormous legacy from the past in terms of contaminated land and efforts and costs associated with land management.

Clearly, remediation requires investment. There was also disappointment that while a lot of advice was on offer from EU countries, with the exception of the former DDR, there was little hard investment in brownfield remediation. On the other hand the value of the investment in land remediation in the DDR was questioned, given that huge amounts of money had been spent, yet economic activity remained depressed. Some CEE delegates expressed the view that in some cases new legal frameworks seemed to shifting responsibilities for State-owned polluting industries operated in the Communist era onto new site owners and local authorities.

For companies investing in CEE countries, the rapidly changing regulatory and liability policies, particularly in the Accession States create some significant uncertainties with regard to financial risks, in part because of uncertainties in how contaminated land will be regulated and liabilities assigned in the future. Therefore, many companies moving into CEE countries prefer greenfield sites. On the other hand there are also some significant opportunities. In many CEE countries there is a larger proportion of former industrial derelict land in city centres or close to major conurbations. In EU economies these are typically the sites with greatest economic potential for redevelopment projects. However, while organisations such as the EBRD are willing to invest in projects, these projects still have to be economically viable. The scarcity of money and the changing contaminated land policies in CEE countries may create uncertainties that make all but the most lucrative of projects seem too high risk. In a number of countries there are *some* mechanisms to transfer financial risks, for example via insurance or re-insurance. These mechanisms have not yet become widely available in CEE countries because of these uncertainties, compounded by a situation where contractual law in general is still developing. Indeed risk transfer mechanisms in CEE countries were described as "embryonic".

Stabilising contaminated land regulations and policy as regards liabilities is likely to be a significant step in CEE countries in creating the conditions favourable for risk transfer and inward investment.

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However, as a salutary point, CEE countries are also in competition with countries with yet cheaper labour.

It was felt that NICOLE offer much of potential use to CEE countries, and also that CEE countries presented new opportunities, but that these were constrained by the uncertainties in contaminated land regulation, liabilities and contract law in general in these countries. NICOLE does offer opportunities for the development of collaborative projects, for example developing standardised terms and conditions for remediation project contracts.

Some of the NICOLE Industry Subgroup members expressed the point of view that service providers need to be able to provide better cost estimates for remediation work. Remediation is not the core business of many site owners, whose income is typically generated elsewhere. More generally service providers should be more attuned to the financial risks of remediation projects, and perhaps take some financial responsibility for the work they carry out. The Internet auction case study reported at the meeting, for risk assessment and remediation services, indicated how commercial managers in some companies see contaminated land management services as a commodity services, or at least as a service for which competitive forces can drive down prices. Together, a drive for better cost estimating and accepting financial liabilities for services, and a desire to force greater competition, could put service providers under some pressure to change.

Some service providers at the meeting felt that innovative approaches to financial risk transfer mechanisms, such as insurances, standardising service packages and market consolidation would provide the necessary adaptation. Others felt while that a drive to “commodity” services for land remediation might seem attractive to commercial managers with limited knowledge of land contamination problems, ultimately this was a short term and ineffectual step for the following reasons. Firstly, contaminated sites tend to be unique in one or more important regards. Secondly, land remediation services are already a highly competitive and low margin market. Reducing margins further would simply drive out the more able professionals. “Dumbing down” of the service provided might mean that problems could be overlooked or inadequately addressed, or that opportunities might be missed. One can draw a comparison with the costs of accountancy and legal services, which are typically, hour for hour much greater, yet the liabilities of an incorrectly managed contaminated land problem could be huge.

The impact of the “Internet auction”, reviewed in this report, on the quality of service the company is receiving is still being assessed. Given the breadth of views, it will be interesting to see how this experiment turns out. It is also worth noting that however services are retained, and financial risks transferred, the quality of information available to decision making is only as good as the quality of the information resulting from the site investigation work, as pointed out in the last NICOLE workshop in Pisa.

Not all industry delegates had the same confidence in risk transfer mechanisms as a means of controlling future liabilities, with delegates from several countries (Norway, the Netherlands and Germany) expressing scepticism. Some questioned whether such mechanisms would work if the original site owner became bankrupt. However, risk transfer mechanisms can be arranged so that cover is still provided for future site owners in this circumstance. Others felt that the regulator would always be able to “go back” to the original owner, who would then not be compensated by a third party holding an insurance. For example, the regulator would go to the original owner because following the chain of transactions to the current owner would be too time consuming. They would assume that the original owner would then take civil action to recover his losses. Two possible solutions to this problem were suggested, the first being that the *Environmental Liability Impairment* policy should be joint, including the original owner. The second possibility is that money should be set aside in an escrow account to deal with possible future liabilities. A major disadvantage of such accounts is that the ability to put this capital to work in an organisation’s general business is then lost.

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In terms of dealing with liabilities, and investing in sites, a possible categorisation for brownfield sites is into two classes:

- those with a net present value (NPV) more than zero (after redevelopment), and
- those with NPV of zero or less.

Much of the discussion about brownfields redevelopment at this meeting discussed managing sites with net product value more than zero, although it was pointed out that it is possible to divest of sites with NPV less than zero in a transaction for a portfolio of sites. However, there are many sites in CEE with NPV less than zero. In some countries (for example the UK and the Netherlands) there are policies in place or have been polices in place to provide funding to regenerate areas with such sites for social and political reasons. However, EU competition policy has greatly limited what can be offered by way of redevelopment incentives for such areas.

In CEE countries land values are generally depressed, although increasing around major conurbations like Warsaw, Prague, Bratislava and Budapest. From an investors point of view this can make greenfield sites more attractive, as long as ownership can be clearly established, as the differential between green and brownfield land costs is not great. Equally, from an investors point of view it is often more convenient to build from new rather than refurbish existing buildings.

The contaminated land inventories (or other land use inventories) existing in many Member States of the EU do not yet exist in CEE. Indeed, many areas in CEE lack property or land registers of any kind. Furthermore, many industries do not yet carry out regular environmental / emissions monitoring. This means that the extent of land contamination in CEE, and its potential for change, can only be guessed at. Contaminated land inventories are perhaps 5 to 10 years away from existence in CEE countries. Many CEE countries are heavily reliant on groundwater resources such as the Carpatian Basin, which are under severe threat (or in some cases already seriously affected) by industrial and agricultural emissions. Furthermore, many areas of the CEE' have an extensive aquatic transborder network of rivers and lakes. The Water Framework Directive implies extensive industrial site decontamination works to stop secondary contamination of surface waters. While CEE Accession States have been aware of EU policy in groundwater for many years, there has been as yet little development of water policy, and a step change in policy will therefore have to take place.

Use of risk based decision making is rare in CEE, although there are now many service providers with appropriate expertise. This is felt in part to be due to a lack of awareness in the regulatory sector, especially at a local level, and a desire of those in charge of developing regulations to keep decision making processes as simple as possible: i.e. comparison of a concentration with a number (limit value). Such decision making can also work to the commercial advantage of developers who can more clearly show compliance (when this is actually achieved).

The full report provides summaries of the papers given, along with a discussion based on points raised during the meeting, and comments from a number of delegates after the meeting.

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1 Introduction

NICOLE supports two workshops a year and produces a meeting report for each. Past events and future workshops are listed in Table 1. Further information, for example reports or registration forms, are available on the NICOLE web site: www.nicole.org.

Technical issues are usually a dominant element of dealing with contaminated sites and NICOLE workshops have to date focussed on this aspect of the problem. In practice, problem-holders also have financial or commercial decisions to make. NICOLE, as a Network, is always looking to expand the range of topics related to contaminated land as well as to enlarge its geographic reach across Europe. Consequently, NICOLE held a workshop focussing on the financial aspects of site restoration, with an emphasis on Central and Eastern Europe (CEE), over 6th to 7th November 2002 in Budapest Hungary.

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This report provides summaries of the papers given, along with a discussion based on points raised during the meeting, and comments from a number of delegates after the meeting.

2 Proceedings

An Overview of the European Bank for Reconstruction and Development, Alistair Clark, EBRD London

The European Bank for Reconstruction and Development (EBRD) is an international financial institution established in 1991 (www.ebrd.com). It is owned by 62 national and supranational shareholders. The largest single shareholder is the USA, the second largest is Japan. The majority shareholding is held by the EU (Member States and the European Commission). Its goal is to promote market-based economies in 27 countries in central & eastern Europe and the former Soviet Union. Its capital base is €20 billion, on which it earns interest from its various investments. So far the EBRD has committed €19.6 billion for 850 projects to date, whilst retaining its capital base. EBRDs' investments act as a catalyst for change, stimulating direct foreign investments, as well as mobilising domestic capital. Its ability to attracting third party co-financing levers €2.5 for every €1 the bank invests. Cumulative funds mobilised to June 2002 are €64 billion (unaudited), illustrated in Figure 1.

The EBRD's objectives are to promote:

- a transition to free, market-based economies by supporting private and entrepreneurial initiative
- a better investment climate
- good corporate governance at project, corporate and country levels
- environmentally sound and sustainable development.

The key principles underlying EBRD operations are: sound banking doctrine, that they are additional to the Private Sector and that they assists transition. Sound banking principles include: careful due diligence (commercial, legal and personal), backing commercially viable and sound projects, ensuring a fair balance of risk / rewards for all parties, adjusting returns on the basis of financial risk. EBRD

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activities supplement the Private Sector. They open and lead the market, they establish innovative financial structures and they extend the boundaries and break new ground for investments. EBRD sees its role as a door opener for investors - financial and industrial. EBRD takes financial risks and political risks both on sovereign and sub-national basis. It accepts long maturities and shares equity risk.

Table 1: Recent and Forthcoming NICOLE Events and Publications

Date	Event / Report
13-14 March 2003	NICOLE Network Meeting: Sustainable Land Management Barcelona, Spain, see www.nicole.org for further information
6 - 7 November 2002	NICOLE Network Meeting: Financial Aspects of Land Management in Budapest, Hungary
18 – 19 April 2002	Report of the NICOLE Workshop: Cost-effective Site Characterisation - Dealing with uncertainties, innovation, legislation constraints, 18-19 April 2002 Web link: www.nicole.org Information Gateway: NICOLE News Service – Announcement 212, and <i>Land Contamination & Reclamation</i> 10 (3) 189-219
14-15 November 2001	Report of the NICOLE workshop: ICT/Computing applied to contaminated land characterisation /remediation and MNA , Rotterdam, the Netherlands (Port of Rotterdam) in conjunction with the Network on Natural Attenuation in Groundwater and Soil (NNAGS). Web link: www.nicole.org Information Gateway: NICOLE News Service – Announcement 187, and <i>Land Contamination & Reclamation</i> 10 (1) 33-59
October 2001	<i>NICOLE News</i> 2001 issue, Web link: www.nicole.org Information Gateway: NICOLE News Service – Announcement 171
17-18 May 2001	Report of the NICOLE workshop: Cost-effective clean-up technology; quality assurance and acceptance , Paris, France. Web link: www.nicole.org Information Gateway: NICOLE New Service – Announcement 167 and <i>Land Contamination and Reclamation</i> 9 (4) 377-395
January 2001	Special Issue of <i>Land Contamination and Reclamation</i> , outlining NICOLE and CLARINET work, www.nicole.org and www.btInternet.com/~epppublications/ <i>Land Contamination and Reclamation</i> 9 (1)
9 and 10 November 2000	Report of the NICOLE workshop: Brownfields: How to Change a Potential Threat into an Asset , IJmuiden, The Netherlands. Web link: www.nicole.org Information gateway: NICOLE News Service – Announcement 131 and <i>Land Contamination and Reclamation</i> 9 (2) 252 – 256
October 2000	<i>NICOLE News</i> 2000 issue, Web link: www.nicole.org Information gateway: NICOLE News Service – Announcement 120
September 2000	Joint Statement of NICOLE, CLARINET, ETCA and SENSPOL: Sustainable Management of Contaminated Land for the Protection of Water Resources, Web link: www.nicole.org Information gateway: NICOLE News Service – Announcement 112
21-23 June 2000	EU Workshop on The Protection of European Water, Resources, Contaminated Sites, Landfills and Sediments, Venice. Web link: www.etcenet.org/
22-23 May 2000	Report of the NICOLE Workshop: Source Management , Helsinki, Web link: www.nicole.org Information gateway: NICOLE News Service – Announcement 121 <i>Land Contamination and Reclamation</i> 8 (4) 67 – 68.

EBRD ensures its impact on transition by supporting projects which create, expand and improve free and competitive markets (including private ownership). It acts to promote the establishment and strengthening of institutions, laws and policies supportive of the market, and the adoption of market-oriented, good corporate behaviour and skills.

EBRD has a number of operational priorities in CEE countries which include: supporting the creation of sound financial sectors, developing small and medium-sized enterprises, promoting infrastructure development, demonstrating ways of restructuring large enterprises, taking an active approach to equity investment, and promoting a sound investment climate and stronger institutions.

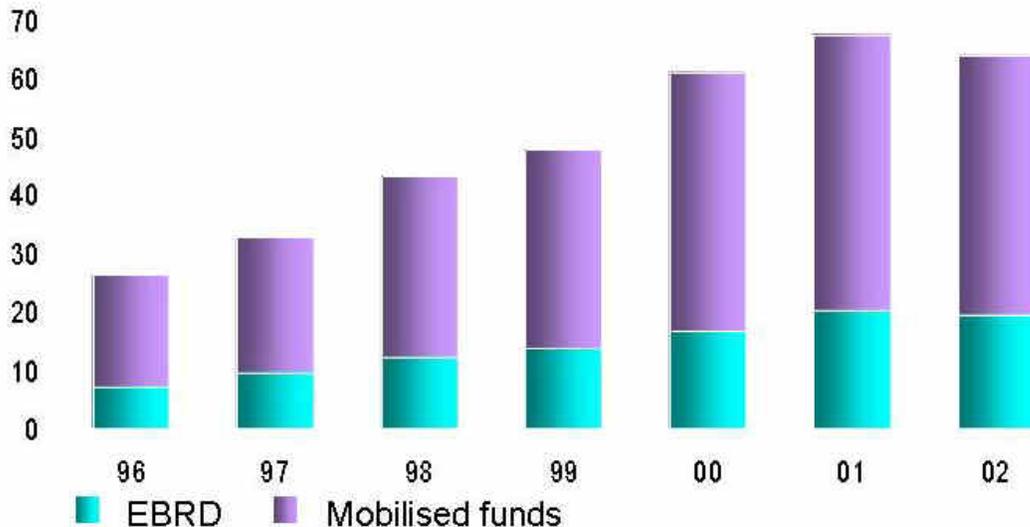


Figure 1: Leverage of EBRD Investments

The EBRD provides finance in a number of ways:

- debt in all forms with varying maturities at floating or fixed rates
- equity in all forms (to a maximum of 35%), direct and indirect funds
- derivatives to support projects when appropriate, a small part of its operations.

It does not act as financial advisers, nor does it provide credit insurance. It does not finance exports and it does not invest outside central and eastern Europe and the CIS.

The EBRD is also able to support the preparation of project proposals from *Technical Co-operation* (TC) funds. They have access to \$1 billion of TC funds, which is separate from their capital base. The procurement policies for these funds are available on the EBRD web site. Note: these funds are often tied to countries which limit the nationality of consultants bidding for funding.

The EBRD promotes environmentally sound and sustainable projects in all its countries of operation. Every project is screened for environmental impact to protect against environmental risks and liabilities and so ensure the environmental soundness of all EBRD operations. The environmental appraisal helps the Bank to decide if an activity should be financed, and, if so, how should environmental issues might be addressed, and/or whether there are ways in which operations can be designed to provide environmental benefits. The environmental standards applied include local, national, EU and World Bank standards and regulations. Key requirements are generally linked to local / national standards.

The EBRD offers Property Development Funds. The key environmental requirements for these Property Funds is that they:

- are in line with the principles of environmental sustainability
- comply with the Bank's FI Environmental exclusion list
- compliance, at minimum, with relevant national regulation

- annual reporting on environment, health and safety to the EBRD.

Environmental Due Diligence (EDD) under the Property Fund includes

- screening - compliance with the Exclusion List with specific attention to site issues (i.e. soil contamination) as well as hazardous construction materials (i.e. asbestos); the status of necessary permits in place;
- documentation of the above information
- appraisal of the documentation – and then if necessary, further investigation;
- documentation of final environmental appraisal - if necessary, includes an action plan; and
- post investment reporting - regular reporting and emergency reporting of accidents/incidents.

Specific environmental investments account for around 17% of total commitments. Opportunities for the property funds include the EBRD's expanding involvement in property business in general including housing development and private-public initiatives for urban renewal in Central Europe. The challenges associated with these opportunities include the need for harmonisation with urban planning to address urban and housing issues, and public disclosure issues (e.g. EU requirements of EIA and disclosure for car-parking of more than 500 cars).

Privatisation Programmes in Poland and Romania, Piotr Syrczyński, Atkins Environment, Poland

Privatisation is one of the tools being used to deal with past environmental damage. During the pre-1989 period, the "environment" was considered to be one of the cheapest and most unguarded resources available, hence its value was overlooked when making investment decisions. In many CEE countries, which were for long periods under dictatorial rule, the majority of the big industrial polluters had been state owned. (This presentation used the phrase "behind the Iron Curtain countries" - BICC)

The evaluation of the liabilities in privatisation transactions is difficult, usually because the liability data required to carry out such an assessment is scarce. For example, the first major research exercise undertaken on the subject of soil and underground water contamination was performed in Poland in 1988.

In the height of Communist power (end of 60s) in all of the BICCs countries all of the investment decisions (including waste landfill location and type of dangerous waste deposited there) were in the state domain. The ownership of the movable assets (including waste, substances that migrated into the ground, underground water, water in the wells and springs etc.) was in the state hands. The industrial entities did not have their own legal status. Their finances were consolidated inside the state budget and all their purchases were on behalf of the state. The state was responsible for all the debts incurred by the state entities and it had full monopoly for all foreign credits and liabilities

At the beginning of 90s, during the beginning of the democratic processes in BICCs countries, the focus of the parliamentary bench legislators was directed to other matters considered to be more important than those relating to environmental damage. This resulted in an undefined separation of rights and liabilities between existing state and new emerging state-owned companies - an issue, which has still not been properly resolved. Since 1989, many privatisation transactions failed to properly address this problem and consequently the resulting unclear legal situation has generated much confusion.

- The political forces active in Poland have refused to discuss and address this matter. The State Treasury has been ordered by the Ministry of Finance not to guarantee funding for future environmental clean-ups as such costs are considered to be hidden budgetary liabilities.

Privatisation authorities (with some exceptions) have not agreed to full indemnification. In the majority of cases all liabilities are transferred to the potential investors.

- The political forces in Romania have decided to adopt an opposing view to that of Poland. Environmental issues during the privatisation procedure are treated seriously. The legal environment is quite different. The law forces the cooperation between environmental inspectorates and privatisation authorities. Compliance schedules should be agreed and the privatisation contract should include adequate provisions to cover environmental liabilities and future investments.
- Transactions in Eastern Germany (former DDR) have been connected with the two types of financing:
 - the group of small and medium size companies was sold for 1 DM with the clause that the new owner pay the whole costs of the cleanup;
 - the rest of the companies and the assets was cleaned up with the West German cash and the total consolidated costs were after the 10 year period at the level of 10 billion DM (for environmental purposes only).

All the cleanup processes in Germany have been performed on the basis of the local regulations and technical standards. Only recently Act on Protection against Harmful Changes to Soil and on Rehabilitation of Contaminated Sites published on 17 March 1998 (Federal Law Gazette I p. 502) introduced more general rules in this area although German constitution and law caused that the real implementation of this law is in the hands of the states.

- In Czech Republic the past pollution liability was separated from rights and liabilities of the state owned companies. Since 1996 total number of Environmental Agreements made has been 104. The total sum of environmental guarantees so far has been \$3.75 billion.

During environmental audits undertaken in the BICCs the same questions are commonly asked, namely:

1. Who is the owner of pre 1990 waste and/or pre 1990 contamination?

It is a crucial question and one, which must be answered to enable the extent of environmental liabilities to be assessed. Additionally, whether it is a State owned or not? How large a proportion of this waste, will the now privatized entities retain responsibility for? Should the cost be jointly shared with the State? Who will decide, and what procedure will be followed in making this decision, in respect of liabilities and associated clean-up costs?

2. Who will be responsible for environmental damages caused during Communist rule? How to seek compensation? What value of damages should be paid by the State?
3. How to define "harmful soil changes" and "harmful underground water changes"?
4. How clean is clean?
5. How long should the clean-up process take?
6. Does the investor / site owner have a responsibility, alone or jointly with others, for any impact and associated clean-up activities of pollution on other sites or properties?

The implementation of the *polluter pays principle* for contaminated land issues is generally problematic in BICC countries, as the polluter was effectively the State. It is unlikely that this principle can be implemented during the privatisation process. It is evident however, that the implementation of alternative approaches has been burdensome for potential investors, as outlined below.

Investor/Company Pays Many the BICCs try to pay as little as is possible for the site restoration. If the state owned company is profitable and privatized through Stock Exchange this task is very simple.

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During the stock-market offerings State Treasury protects itself from past environmental liabilities through special clauses in information memorandum.

Community/Local Citizens Pays Many Site Restoration Projects in Poland and Romania are connected with the old communal landfills that were partially used for industrial toxic waste. Local communities pay the biggest part of the costs of the cleanup of old storage place for unused herbicides and pesticides. In addition, many brownfield areas left after the bankruptcy of the state enterprises is in local authorities ownership as well. Many of them have taken these assets in exchange for unpaid local taxes! In such case they are going to lose their money twice.

Taxpayers/State Treasury Pays This principle was fully implemented during the Former Russian Bases Restoration Program that was performed in 1992 - 1999 period in Poland. On the basis of the contract between Poland and Soviet Union, Poland has agreed to pay the full costs of the needed remediation. Another example is the State funding for remediation of mercury contamination in Rzeszów area. Another case where the Taxpayers/State Treasury Pays Principle is applied is connected with all reclamation and recultivation processes connected with past mining activities but it is applied only if there is no liable party.

Operator/Polluter Pays Operator Pays Principle is more common in the cases where a currently or previously state owned company tries to dispose a portion of its assets. In such cases the potential buyers have the best negotiating position and may demand that the previous operator/owner (e.g. state owned company) pays for the future Site Restoration. The purchase of assets needs the full legal and technical review so usually the environmental problems are addressed properly in such contract as well. There are several cases of such contracts where the new investors negotiated more than two years until they reach the agreement. There are many cases where the potential investors could not reach the transfer of the liabilities to the previous operator/owner and the whole project was abandoned.

Innocent Citizens Pays In Poland the National Investment Fund Program was developed without any protection from environmental liabilities. Each adult Polish citizen received in 1996/7 coupons that entitled them to shares of National Investment Funds. A set of funds with the total yearly management fee in the range \$60 million was organised for management of more than 450 previously state-owned entities. The State Treasury has consequently avoided any environmental liabilities connected with these entities and the real costs of the liabilities have reduced the value of the NIF shares in such a way every adult Polish citizen involuntarily paid.

Creditors (Banks/Funds) Pays Often banks have not developed the full protection systems against hidden environmental liabilities. The typical case is in the situation when the entity (usually state-owned) goes bankrupt but its assets (although located in good and valuable environment) are contaminated. In such case the creditors receive less than the market value of such property due to the fact that the potential investors discount the future clean-up costs from the price offered to the receiver.

The arguments surrounding the financing of Site Restoration issues can help us to understand the conflict that exists between the potential investors, who prefer a stable legal situation, and those who want accession to EU as quickly as possible and who will thus hastily implement as many new (market orientated) regulations as is possible. As former BICCs, such as Poland and Romania, make efforts to improve their legislation, there are rising concerns about the consequential social and economic budgetary problems of such new contaminated land regimes. Further, BICC countries are concerned that adverse effects of such regulations may have a direct impact on citizens, inasmuch that the capital cost of privatisation of previously state owned entities would increase.

It is also important to note that Site Restoration issues do not only relate to engineering problems. Other factors, which have at one time or another been of concern are those relating to health concerns,

property values, fear of uncertainty, and even fears about loss of control over aspects of community life and decision-making.

Legal Perspectives on Transferring Contaminated Land in CEE, Waleria Skarżyńska, Zuzana Bartová, Libuše Tomolová, Richard Lock and Zoltan Nasasdy; Clifford Chance, Poland, Hungary and Czech Republic

Poland

The Contaminated Land Liability Regime has been introduced pursuant to the provisions of the Environmental Protection Act 2001 (the "EPA") and that of the Act on the Entry into Force of the Environmental Protection Act and the Waste Act 2001 (the "Transitional Act"). The new regime is often criticised as being very rigid and extremely costly to implement. The main aim of the 2001 legislation was to enable the identification of the party responsible for clean up under public law and to provide for legally enforceable land quality standards. The system is believed to be unlikely to bring any significant environmental improvement due to the high costs of its implementation.

The new contaminated land liability regime in Poland is a scheme of regulatory liability. It is enforced by public authorities vis-à-vis private parties, i.e. operators of installations. Theoretically it could be also enforced against private owners of contaminated land and against central and local governmental bodies. The regime should be distinguished from civil liability, i.e. liability that is enforced between parties that enjoy an equal status before an impartial court.

Pursuant to Article 102.1 of the EPA the holder of land is liable for its remediation. This obligation refers both to land contamination and to damage to land's physical appearance. In the great majority of cases the holder is the owner of land, only in very rare cases would the holder be a different entity. The holder of land can not be released from liability by claiming that the damage was caused by a third party prior to the holder obtaining the legal title. This results from the basic legal rule that liability is transferred together with the legal title to land. However, if a third party caused pollution after the holder acquired the property and the holder is able to prove this fact, the holder will be released from liability. Both the holder and the polluter would be jointly and severally liable for clean up in the event where the holder knowingly permitted contamination to occur, even though it was caused by a third party.

Definitions of contamination are made in the Ministry of the Environment Regulations of 9 September 2002 on Soil Quality Standards (the "Regulations"). Under these regulations, land is defined as "contaminated" when any one of the concentration level standards is exceeded. Accordingly, remediation of land has been defined under Article 103.2 of the EPA as bringing it back to a condition where none of the concentration levels standards is exceeded. three categories of land have been established, for which three different sets of soil quality standards have been developed

- *Group A* – land located in areas under protection pursuant to the Water Act 2001 and the nature protection laws. The Regulations provide that unless the contamination constitutes a threat to human health or to the environment, no special action is required. Such land will however also fall under Group B or C and will be subject to the provisions thereof;
- *Group B* – agricultural land with the exception of land under water in ponds and ditches, forest land and land which is tree-covered and shrub-covered, wasteland and developed and urbanised land, save for industrial land, mining land and land used for transportation;
- *Group C* – industrial, mining and transportation land.

Regulations apply both to soil and sub-soil, which extends down to the depth of man's potential impact. The Regulations do not therefore apply to underground water contamination. Therefore, the "*polluter pays principle*" still applies to underground water contamination on the basis of the more general provisions of the EPA. Hence, pursuant to Article 362 of the EPA the environmental

enforcement authority may require that the environment in general is brought back to the proper condition by the polluter. This provision could be used to enforce the clean-up obligation in respect of underground water, the major difficulty, however, is that the new law does not provide for underground water standards.

The head of the intermediate tier of the local authorities (the *starosta*) is the enforcement authority under the new contaminated land regime. The local *starosta* may either impose the clean-up obligation on the holder, or, in certain cases, may enforce the clean-up obligation by remediating the property and charging the holder with the costs of remediation. The local *starosta* should maintain a register of contaminated land to be updated on an annual basis. There are no clear provisions on how this should be done and there is no procedure yet on the removal of contaminated land from the register. This procedure is envisaged to be enacted under a proposed amendment to the EPA.

The contaminated land provisions of the EPA became effective on 1 October 2001. Those holding land on this date suddenly found themselves facing the risk of liability for contamination which they did not cause. The new law permits these holders to avoid liability by proving who was the actual polluter. This, however, can be done only by those who were holders of land as of 1 October 2001. It is envisaged under the Transitional Act that the holders of land as of 1 October 2001 may also benefit from transitional provisions referring to the scope of the clean-up obligation. If the holder of land as of 1 October 2001 proves that contamination dates back to pre-1980 the restoration of land can be limited to measures sufficient to prevent hazard to human health, damage to the environment and the further migration of the pollution.

This proviso does not in any case waive the liability of an entity that purchases the same site after 1 October 2001 by way of an asset transfer transaction. Such entity would fall under the new contaminated liability regime and would not be entitled to benefit from the transitional provisions. Obtaining the decision of the local *starosta* might be useful however in cases where a site acquisition is envisaged via a share purchase transaction, as the holding company will continue to benefit from the decision.

Hungary

Operators of industrial facilities who pose a hazard to or pollute or damage the environment with their activities or omissions, could be held liable for their activities under Hungarian civil, administrative and criminal law. Except for criminal and misdemeanor liability, Hungarian law attributes liability for unlawful activities to the current owner and user of land. The owner and the user of the land on which an unlawful activity is carried out are jointly and severally liable for such unlawful activity, unless the contrary is proven. As, after becoming aware of environmental damage on a real property, the first target of environmental authorities is usually the owner of the land (as revealed by a land registry search) the onus is on the owner to prove his innocence in causing environmental damage. The owner may only be exempted from the joint and several liability if it names the actual user of the real property and proves beyond any doubt that the responsibility does not lie with himself, but the actual user. The owner and the user may also shift liability to a predecessor if it can be proved that the environmental damage was caused by a former owner or user.

The Civil Code defines activities hazardous to the environment as "activities involving higher risk". The liability for "activities involving higher risk" is stricter than under the general liability rules, since in order to trigger such general liability it is enough to prove that the activity was not performed in a manner that can generally be expected in the relevant circumstances. However, a person who carries on an activity involving a high environmental risk is liable for any environmental damage caused by that activity. Relief from such liability is possible only by proving that the damage occurred due to an unavoidable cause.

Sanctions available for the administrative authorities against unlawful environmental activities are:

- The authorities may impose an obligation to do something or suspend or ban the unlawful activity until conditions are satisfactorily adhered to.
- Those who violate environmental regulations or a decision of an authority or who exceed the regulatory limit values can be required to pay an environmental fine. The fine is adjusted according to the costs of clean-up, the characteristics of the environmental pollution and level of risk or the environmental damage caused.

The pollution of the environment may have criminal and misdemeanour law consequences. The Hungarian Criminal Code sanctions specified activities such as damaging the environment or nature and unlawful depositing of hazardous waste. Unlawful actions regarded as misdemeanours are listed in the Misdemeanour Act. As a criminal and misdemeanour law principle, liability for any crimes and misdemeanours may only be personal. Therefore, unlawful activities of entities vested with legal personality may not have criminal law consequences for the entity itself, but for the person who commits an environmental crime. Accordingly, for example, if an employee acted upon the instructions of the manager of the company when committing the environmental crime, both the employee as perpetrator and the manager as abettor may be liable.

If soil, or the ground-water of a land, is contaminated, such contamination must be remedied. According to Hungarian law, the party who has been conducting or is conducting the contaminating activity must clean-up the contamination. However, this rule is not applicable if another party assumed the liability for the contamination. In this case the party which assumed liability for the contamination must perform the clean-up. In cases of contamination caused after 1995, if the person conducting the polluting activity is unknown or has been liquidated without legal successor, the current owner and the user of the land are jointly and severally responsible for the clean-up (For the exemption right of the owner pls. see our introduction above). If the contamination was caused before 1995 (so-called “historic pollution”), the contamination should be remedied from the financial sources of the Hungarian State.

Czech Republic

The contaminated land liability under the Czech law is not governed by one uniform regulation and presently it is covered by several regulations of the public (regulatory law regime) and private law (private law regime). The regulatory regime however should be distinguished from private law regime, where the liability is enforced between parties that enjoy an equal status before an impartial court.

The Czech Environment Act No. 17/1992 Coll. (Environment Act) provides for a general obligation of persons (both individual persons and legal entities) to prevent and/or minimise environmental pollution and damage (ecological damage) and to minimise the unfavourable environmental impact of their activity. Accordingly appropriate authority imposes the duty to: (i) restore (to clean up); or subsidiary (ii) compensate the ecological damage (money compensation). The Environment Act does not expressly states to whom such duty should be imposed, however logically the obliged shall be the polluter or subsidiary the owner of the land. If the owner of the land fulfils the duty imposed by the authority, he has the right to recourse against the person who caused the ecological damage. In addition penalties up to CZK 1,000,000 can be imposed to persons who when operating business caused ecological damage by breaching legal regulations.

According to the Czech Act on the Protection of the Agricultural Land¹ No. 334/1992 Coll. (Agriculture Land Act) owners or tenants of agriculture land (both individual persons and legal entities) are liable if by use of such land they contaminate it by harmful substances (and consequently contaminate sources of drinking water and endanger the food chain, the health or lives of people and the existence of living organisms (the ecosystem). The appropriate authority may in serious cases impose duty to eliminate the above-described breaches; or respectively decide that such contaminated land must not be used for the production of agricultural products entering the food chain. In addition further penalties in the amount of 500x minimum wage (currently CZK 5,700) can be imposed for breaches of duties set by the Agriculture Land Act i.e. for a failure to implement measures imposed by appropriate authority.

The general liability regime contained in the Environment Act in 2.1 above as well as liability under specific regulations (i.e. the Waste Act, the Water Management Act, the Fertilizer Act etc.) applies to any land which is not the agricultural land. In case of land transfer from the Czech Republic according to the Czech Act on privatization No. 92/1991 Coll., the new owners of land are indemnified for any duly spent expenses spent for recovering of land contamination caused before privatization on the basis of an obligatory ecological audit. The Czech Criminal Code No. 140/1961 Coll. provides for few criminal offences against environment. At present penal sanction (i.e. fine, disqualification from directorships or imprisonment) can only be implied to individual person for either intentional or negligent endangering of or damage caused on the environment.

The Czech Civil Code Act no. 40/1964 Coll. (Civil Code) imposes general liability for damage caused to any person (both individual person and legal entity) by a person breaching a legal obligation whereby the legal obligation may consist in a duty imposed by appropriate authority under the Regulatory law regime. The Civil Code also includes provisions for specific liability according to that:

- Any person is liable for damage caused to another person while operating a business. Exoneration from this kind of liability is possible subject to proving that such damage was caused either by an unavoidable event (not arising from the operation of certain business) or by own conduct of the persons injured;
- Any person is liable for damage caused by the nature of hazardous operation (operation which makes use of natural or technical forces or things which under the present state of scientific and technical development cannot be fully controlled even when exercising all the necessary efforts). Exoneration from this kind of liability is possible only by proving that the damage could not have been prevented even by exercising every effort.

CEE-Brownfields and The Financial Institutions: Threat or opportunity? Sultana Gruber, Bank Austria Creditanstalt - Member of HVB Group

Bank Austria Creditanstalt, Austria's largest banking group, has pursued a strategy of targeted expansion in the region of Central and Eastern Europe (CEE) since the early 1990s. This early commitment to the region is seen by the bank as giving them a clear competitive advantage. Having started with a handful of employees in Budapest, the bank now operates the largest international banking network in the CEE region. Within the HVB Group, Bank Austria Creditanstalt is responsible for these markets. Its CEE network comprises 900 offices in 15 countries. Some 21,400 employees

¹ Agricultural land consists of cultivated land, such as arable land, hop-field, vineyards, gardens, orchards, meadows and pasture and temporarily uncultivated land. Agricultural land also includes ponds for fish-breeding and water-poultry breeding and non-agricultural land necessary for agricultural production, such as paths, land on which there are irrigation facilities, reservoirs of irrigation water, drainage channels, dykes protecting land against swamping or floods, and terraces protecting land against erosion.

serve 3.5 million customers. With total assets of EUR 24 billion, the Group is the largest international network bank operating in the region.

Both BA-CA and HVB have a strong commitment to the principles of sustainable development. BA-CA is also one of the founding members for the CABERNET network². Project finance proposals should explicitly address social, environmental and broad economic benefits. BA-CA are committed to sustainability, and try not to reject credit applications concerning a contaminated site. While they have a hands-off-off approach, they try to find win-win solutions in a sustainable way.

Largest network in Central and Eastern Europe

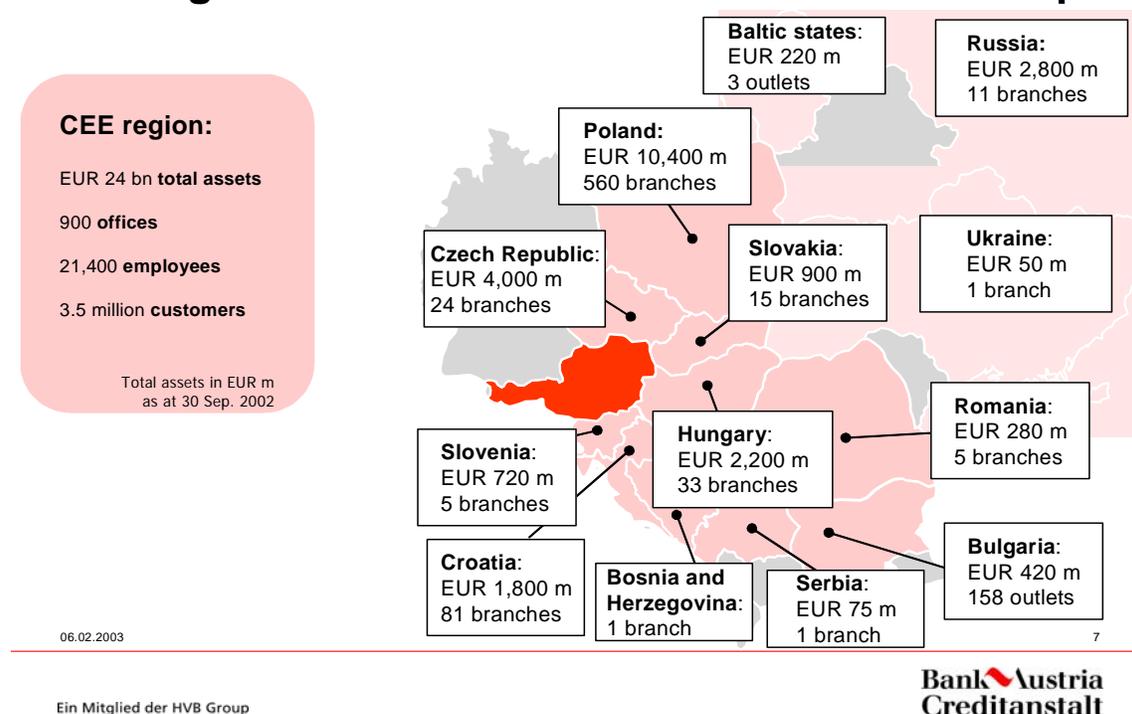


Figure 2: Marketing Information for BA-CA in CEE

A study carried out for the Chamber of Business Centre in Vienna estimates that 120 billion € will be needed for environmental protection investments to achieve compliance with the CEE-Countries environmental regulations and the EU environmental standards. BA-CA considers the redevelopment of brownfields as a big challenge, as there is a link between investment and redevelopment of brownfields.

Financial institutions are sometimes blamed for the lack of available capital in the CEE. However they operate under a number of constraints.

- Banks are (financial) risk-averse
- Banks must continually react to the financial risks posed by laws and guidelines such as environmental laws affecting clients and both theirs and the banks credit ratings.
- Banks must seek to act within the best interests of the communities they serve.

² The Concerted Action on Brownfield and Economic Regeneration Network (CABERNET) was established in January 2002 funded under the EC 5th Framework programme, www.cabernet.org.uk

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- Banks must return a profit to their shareholders.

The main fears of a financial institution are costs and risks. Financial *forecasting* and making financial risks *transparent* are therefore necessary parts of any loan or investment request.

In considering land the key question becomes one of whether the potential contamination is likely to cause harm. However, in addition, if buildings are constructed on a contaminated property, the construction project becomes more expensive. The typical financial risks encountered are as follows.

- Financial packages for brownfield sites require more time and staff work (environmental site assessments, detailed appraisals, treatment and disposal of the contaminated soil)
- Third parties may make claims and there may be restrictions on land use.
- The perception, presence, nature and extent of contamination can affect the cost of redevelopment and the liability risk, both of which influence the ability to secure financing, that means:
 - *Loan or credit risk:*
Concern about the ability of borrowers to repay a loan because of their liability for remediation costs. As a lender, BA-CA has to consider the possibility that their borrower may be held liable as an owner for the cleanup regardless of his lack of causation or contribution of the problem
 - *Collateral risk:*
If BACA has to foreclose at a later date they would have a lower value of our collateral or lose the full collateral value of the property. A real estate appraisal may or may not provide insight as to potential environmental concerns. Hence information about the current and historic usage of the property and environmental due diligence are very important. As a rule BA-CA lend up to 70- 80% of the adjusted collateral value³.
- In many situations, private developers and financiers cannot act on their own to ensure that the full economic potential of site reuse will be realised.
- Market risks also have an impact on redevelopment projects. There must be a demand for properties or incentives must be provided to make them more competitive. The project of redevelopment of brownfields has to be "viable". Viable in banking terms means "creditworthy". Creditworthy in turn means that there has to be sufficient financial assurances, that the loan will be repaid in the event of default. Additional assurances could be further mortgages, inventory and equipment, cash flows or personal guarantees of the borrowing entity, or insurance mechanisms (see below).
- Political risks include costs of remediation increasing after the conclusion of the contract due to any reduction in legal limiting values, or other regulatory changes. Legislative and public policy can provide the ability to better quantify such risks. In some countries there are sources of public funding for environmental investigation costs and to help partially reduce this barrier to redevelopment. In addition to providing incentives for private investment, government programs provide grants, loans and tax credits. Grants are usually awarded for site preparation and infrastructure improvements. Gaps in public funding can be a deterrent to site and facility reuse.

Where BA-CA is supporting the purchaser financial risks may be reduced by mechanisms such as:

- Subdividing the land into smaller parcels (while the seller deals with contaminated sections, the buyer can redevelop the "clean" parcels)
- Agreements in the purchase contract (seller-buyer)
- Joint-ventures (seller has a share in the financial returns from the redevelopment)

³ Adjusted means the value of the property minus any costs to restore the property to a readily marketable condition. As such, the cost of cleanup is subtracted from the appraised value of the property leaving the adjusted value.

- Purchase options: buyer holds the right to purchase the property, but does not take title until the site is clean

Insurance products may be a method to address the environmental liability concerns. Different types of insurance could be possible:

- "Post-remediation" coverage can in some cases insure that remediation has been completed and that additional costs will be paid by the policy if for some reason further remediation must be performed.
- A type of "stop-loss" policy can pay for remediation cost overruns above and beyond an initially established remediation cost estimate, which
 - allows the party that is undertaking the remediation to cap or fix the costs prior to the beginning cleanup
 - avoids consequential damage at an early stage and
 - prevents substantially higher clean-up cost in the future.
- Insurance can also be taken to deal with political risk.
- Coverage for third-party bodily injury and/or property claims.
- Coverage for spread of existing contamination during remediation.

The brownfield redevelopment challenge is to protect the parties involved in the redevelopment of a contaminated site(s) to ensure that the known exposures are retained and limited, and the risk of unknown or future exposures are transferred. Brownfield redevelopment can offer substantial environmental, economic and social benefits for a local economy. By promoting the redevelopment of these sites and revitalising the communities around them, the quality of life and the environment in these areas will be significantly improved and the risk of human health can be reduced. Many brownfield sites offer the potential for high returns on investment for developers and lenders. Knowledgeable developers and property owners are increasingly capitalising on such redevelopment opportunities.

The redevelopment of brownfields is a win-win solution in the ecological (clean-up), in the social (employment, new technologies) and in the economical sense (financing the redevelopment). All stakeholders -the environment, our planet, this and the next generation would be the winners in this process.

Brownfield Redevelopment Overview in CEE, Robert Adamczyk and Chris Moore, Atkins Environment - Poland

Adamcek defines brownfield (re)development as the development of a site, which has been contaminated by its previous, uses such that a liability has been created for its present or future owners. In many CEE cities industry is based or has been based until very recently in city centres, for example the shipyard at Gdansk. In Western Europe there is a much smaller city centre brownfield legacy remaining.

The economic reuse of brownfield sites is critical for all industrialised economies and societies. The framework provided by environmental policies and subsequent regulations dictates the approach which is adopted and the success of returning brownfield sites to beneficial use. Inappropriately strict policy and environmental regulations can be a significant deterrent to reuse of brownfield sites. In particular, policy and regulations need to provide a transparent framework for allocation of liabilities between stakeholders.

Brownfield sites are widespread in the CEE, but are not recognised as a discrete policy issue. The reality is that the region only sees opportunities for development and cannot differentiate green and brownfield sites. However, there is brownfield development taking place, usually investor-driven, from a direct business need, rather than being facilitated by central policy or funding. The drivers for

brownfield redevelopment are typically privatisation, investment in existing business, or retail development. Retail development is a major driver, for example the establishment of a hypermarket. It can be cheaper to buy a bankrupt business with a brownfield site than negotiate with a large number of small land owners to secure a site local to a population centre. In addition, such sites may well have pre-existing infrastructure, such as roads, drainage, services etc. Availability of infrastructure is a major limitation on economic activity in CEE countries. The low cost of land means that land prices less of a driver for redevelopment in CEE countries.

However, brownfield sites outside such key locations does not have the same value. For example, it is harder to attract inward investment for manufacturing as many countries are vying for such investment. There is a tendency for greenfield development in special “Economic Zones”. There is some commercial concern that regulatory changes may make the redevelopment of brownfield sites more expensive and so reduce further number of viable brownfield redevelopment projects.

Redevelopment of some major heavy industrial sites is hampered by the Soviet planning concept of “protection” or “sanitation” zones. Rather than using pollution abatement, industries were sited distant from housing and a large area around them was simply excluded from development, for example a steelworks in Poland owned 8,000 ha as a protection zone. Such land is both polluted and blighted and also distant from economic activity which might increase interest in its redevelopment.

The other factors that are favourable to the redevelopment of a brownfield site are if:

- they have contacts associated with them who make discussions with the regulators smoother
- political pressure can be brought to bear – new jobs, planning gain etc. etc.
- good planning beforehand
- there is a willingness of regulators to provide solutions rather than approve them
- there is a willingness of investor to go a long way down the track to get permits without guarantees of success.

Important barriers to brownfield redevelopment are:

Poor understanding of the issues by the regulators, local consultants and clients in terms of those liabilities existing beforehand, created during the investigations as well as after.

- poor communication between client and advisors in terms of intended outcomes
- failure to recognise some of the true issues and how they impact on contracts and programmes
- poor planning – impact of single plants which are split for redevelopment, changes in zoning etc.
- a desire by regulators to *provide* solutions rather than approve them
- cost of land and return on investment, e.g. there is cheaper site next door.
- professional objectors.

Negotiations are not always easy with regulators and administrators as a legacy of the old bureaucracies. “Professional objectors” exist who work against development plans and often have to be “bought off”.

Particularly with EU membership, some changes seem likely in the near future. Infrastructure will improve creating greater competition, and lessening the effect of distance from population centres on value. Environmental and planning laws will harmonise with EU “making solutions harder”⁴. For example, more physical evidence will be needed to demonstrate potential risks and compliance. However, grants will become available through EU integration where need can be demonstrated, and positive policy (and funding) towards Brownfield Development will develop, for example the work taking place in Silesia described below. Rules will be clearer and easier to identify potential opportunities compared to today’s need to actually have applied for and obtained permits before success is known to be likely. Overall acceptance of proposals will be harder to obtain in some ways

⁴ In the speaker’s words

and easier in others. One might expect some confusion about the meaning of laws as they are changed and interpreted in the early days. There will be a much greater emphasis on risk assessment (which is not often used). There may also be less dependence on local consultants. A lack of regulatory experience in dealing with new requirements is a potentially serious bottleneck.

Hence in the near future there will be better possibilities for strategic decision making about investment in facilities and planning potential future divestment either in terms of whole or part. This will lead to a better climate for looking at existing portfolios to address these issues and make timely investments to reduce potential future liabilities and enable divestment.

Under current conditions those considering redevelopment of brownfields in CEE should consider the issues carefully, especially the interaction of technical financial and legal issues. It is important to understand that things cannot be done quickly. A staged approach usually necessary, with careful due diligence, particularly with regard to obtaining the necessary consents and permits. It is important to take a “value added” approach to decision making. The advisors and consultants should be able to deal with both the difficult local circumstances, *and* international (especially EU) developments and changing business practices such as Environmental Reporting. The proposed development should be planned in advance to ensure maximum balance between the cost of risk reduction against capital value maximisation

Financing and Cost of Redevelopment of Post-Industrial Sites in Silesia, Ryszard Janikowski and Marek Korcz, Institute for Ecology of Industrial Areas, Katowice, Poland

Polish environmental policy for managing post-production and post-industrial sites requires that these areas must not become post-industrial idle land. They should be used as soon as possible for other functions, for instance forests, recreation grounds, and urban or industrial development. According to the Second National Environmental Policy⁵ the following actions are foreseen:

- by the year 2010:
 - management (comprehensive survey and reclamation) of industrial wasteland and closed landfills,
 - withholding from agricultural and horticultural use soils with excessive cadmium and mercury pending their reclamation,
 - completion of the programme of reclaiming former Russian Army military grounds,
 - removal and reclamation of old bunkers used for storage of pesticides and other toxic materials,
 - initiation of a national programme for the reclamation of degraded agricultural soils, with their partial allocation for forest planting and other non-agricultural purposes.
- by the year 2025 to bring Poland to the situation where the area of land reclaimed each year is not smaller than the area of land becoming brownfield that year.

Typical costs for reclamation in Poland are in the order of:

- 25-250 €/m² for chemically degraded land,
- 250 – 2 500 €/hectare for morphologically degraded land.

These amounts only include the cost of reclamation and not the cost of development or redevelopment. The total estimated cost for the reclamation of industrially degraded land in Poland was estimated (as of the year 2000) to be €266 billion, as set out in Table 2⁶. On this basis reaching the 2025

⁵ The Second National Environmental Policy, Council of Ministers, Warsaw

⁶ Note: this estimate is not complete, as it does not include former hazardous waste dumps and areas located along traffic routes.

environmental policy target would mean a total annual cost of €10 billion nationally, and €4 billion in Silesia. Silesia is one of the most heavily polluted provinces in Poland. Degradation of groundwater in Silesia will continue and will probably accelerate if proper and prompt measures are not taken to de-couple the progress of economic sectors and their pressures on the soil resource through the use of soil protection measures.

The economic impact of remediation problems is massive. Remediation costs of large-scale projects is several billion € per project. Management of contaminated sites must be a phased process. Remediation of soil and land is certain to be far more time-consuming as well as more expensive than earlier stages of environmental protection.

Table 2 Estimated cost of liquidation of land surface degradation in Silesia and Poland (2000 prices)

	Scale	Silesia		National
		Priority		
		Urgent intervention: health, environmental and construction risk	Required because of the environmental risk	Cost estimate
Nature of corrective measure	[km ²]	[billion €]	[billion €]	[billion €]
Clean-up of the areas where chemical degradation exceeds standards permissible for industrial sites	105-120	6.6	24.2	12.5
Clean-up of the areas where chemical degradation exceeds standards permissible for agricultural, forest and residential areas	500-1600	12.5	40.4	100
Liquidation of uncontrolled municipal waste dumps	5-10	0.4	0.5	3.8
Liquidation of uncontrolled hazardous waste dumps	9	?	?	?
Liquidation of morphologically degraded areas	1400	x	13	150
Total	8 000*	19.5	78.1	266.3
*The area of heavily and moderately degraded land in Poland. The degraded land of various types should not be summed, as different types of degradation can occur in the same area.				

Case Study

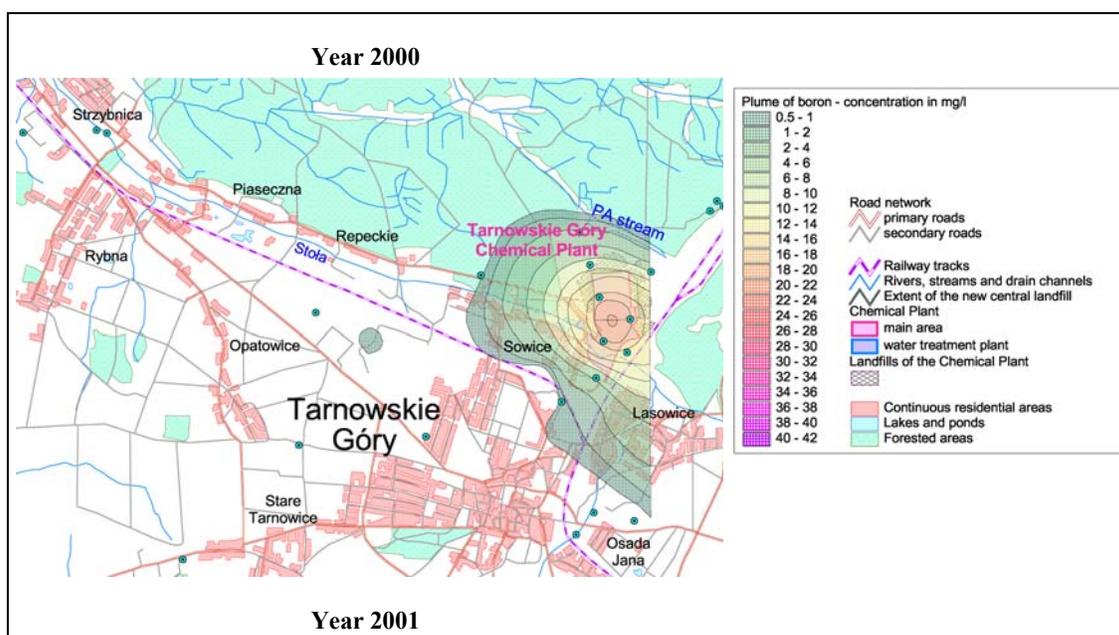
The Tarnowskie Góry Megasite, a heavy metal and organic contaminated area, is located in the Silesian Province (Voivodeship) which is in the southern part of Poland. The former “Tarnowskie Góry” Chemical Plant is one of the most serious source of soil and ground water contamination in Poland. Up to early 1990s, water from the local aquifers was clean and supplied directly to consumers without any additional treatment. In early 1990s monitoring of groundwater revealed that deteriorating aquifers water quality with Tarnowskie Góry Chemical Plant remains the major source. However, in addition, several uncontrolled industrial and municipal landfills create serious risk of groundwater contamination in this area. The list of pollution sources also includes municipal and industrial wastewater treatment plants, farms, storages of mineral fertilizers and pesticides, sites of petroleum products storage and handling and cemeteries. Along with the point sources of pollution in the region,

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there is serious diffuse pollution from residential areas with and without sewage systems, fall-out of air pollutants and excessive use of fertilizer and pesticides.

Tarnowskie Góry Megashite represent steady and long-term potential sources of regional contamination of groundwater, surface water and sediments. Besides the threat to water quality, direct risks can be involved for ecosystems, human health, and for widespread diffuse pollution through contaminated sediment transport in rivers. Groundwater and surface waters are vital resources for our daily life as same for the next generations. For example, the aquifer is contaminated with boron (see Figure 3). The principal sources of boron contamination are industrial dumping sites located on both sides of the Stola River in the southern part of the site. The highest concentrations of boron were originally observed in the vicinity of the site in 1999. In the subsequent two years, further spread of the contamination plume was observed westward, while the area of elevated boron concentrations increased: from 335 ha in 1999 to 640 in 2001. A simultaneous decrease of the highest values was also observed.

Expenditure on Tarnowskie Góry – remediation is and will be extremely very high. As of October 2002, the estimated costs for dealing with hazardous waste landfill cost is €62 million, and for the chemical plant in the region of €115 million. The total remediation cost for the Tarnowskie Góry megashite will be more than €1 billion.



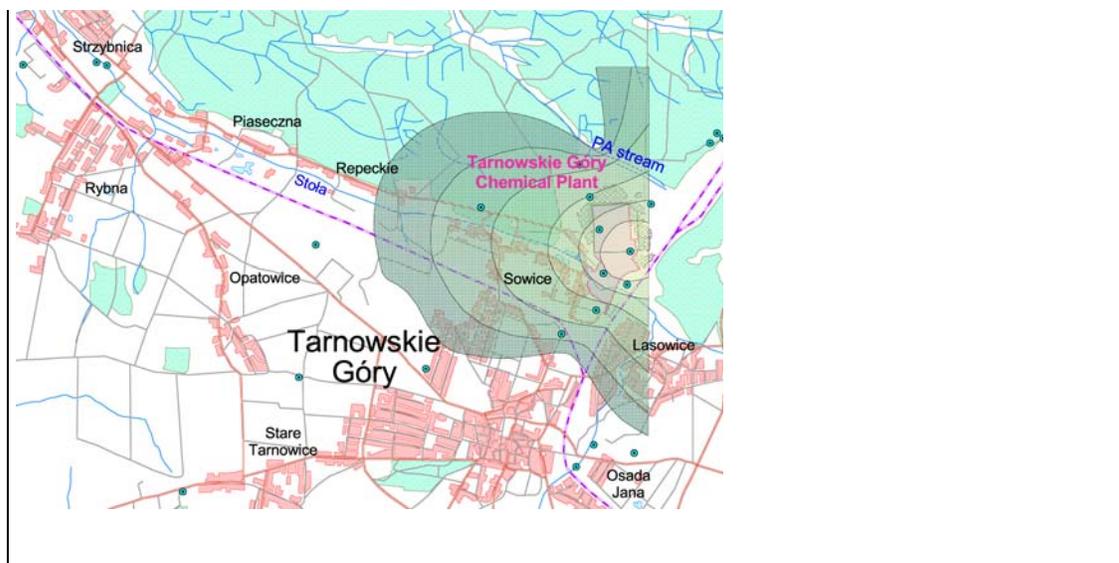


Figure 3. Boron Contamination of Triassic Aquifer at Tarnowskie Góry

Case Study Of Environmental Remediation at The Mazout Ponds in Budapest District XVIII, Edward Someus, TERRA HUMANA Clean Technology Engineering Ltd, Hungary.

Up to 1955 gravel extraction took place in Budapest district XVIII. In the second half of the 1950s the pits left by the extraction (of about 50 x 75 m size) began to be used for temporary storage of *mazout* – crude oil (see Figure 4). The site was owned as a state property and later became the property of the local government. Mazout was stored altogether in nine ponds, one of which was backfilled in 1973-74, and another up between 1990 and 1992. The ponds appear to have been simply filled with soil and debris. No impermeable barriers were installed at the bottom of the mazout storage ponds, consequently heavy environmental damage has occurred.

After 1974 the facility was first leased by a domestic fuel distributor - Budapest TŰZÉP Co. and then by its legal successor, Raab Karcher Tűzép Co. Both of these lessees continued the mazout storage. Subsequently the lessee transferred contiguous areas and cash to the local government as compensation for the environmental damage caused by the mazout storage. In return, the former lessee was absolved from further remediation obligations, which passed to the local government.

Investigation of the environmental damage caused by the storage of mazout started at the beginning of the 1990s. A consultant carried out an environmental assessment in 1991, which estimated remediation costs to be 390 million Hungarian Forints (approximately \$1.35 million in 1991). The report also pointed out that the extent of the pollution was not fully known and that migration into adjacent areas may have taken place. Further studies, carried out in 1995, indicated that the contents of BTEX, PCBs and PAHs in soil and groundwater samples appeared to be relatively low. However, around 2,900 m³ of free phase mazout was found floating on the water of ponds, which contained about 26,000 m³ of contaminated water (containing 5 and 8 mg/l crude oil). The volume of contaminated groundwater was estimated as 16,100 m³ within the site boundaries (dissolved hydrocarbon content of the groundwater between 0.25 and 26.1 mg/l). In some monitoring wells free phase floating mazout was found, of up to 143.6 cm. The volume of contaminated soil with over 1,000 mg/kg hydrocarbon was estimated to be 80,000 m³.

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Remediation work carried out since has been as follows:

- removal of free phase mazout floating on the ponds' surface;
- pumping out and treatment of the ponds' contaminated water (approximately 600,000 m³ so far)
- removal and cleaning of the about half m thick mazout mud that can be found at the bottom and side walls of the emptied ponds;
- pumping out and cleaning of the groundwater in the area;
- cleaning of the contaminated soil.

Treatment objectives were set as 3000 mg/kg hydrocarbon for soils and 0.2 mg/l hydrocarbon for groundwater.

Over a large part of the working area contamination of soil varied between 10,000 and 70,000 mg/kg hydrocarbon at the level of water table, and groundwater levels ranged from 1 to 26 mg/l. Thickness of the free phase *mazout* observed in monitoring wells exceeded 1 m. Based on the remediation work data the volume of contaminated groundwater was reassessed to be nearly 80,000 m³ at the end of 1997 and could be as high as 150,000 m³. The volume of contaminated soil has been reassessed as 112,600 m³. Both the amount of material and level of contamination greatly exceed the 1995 data.

Bioremediation on site in open windrows (see Figure 4), and low temperature mobile thermal desorption technology have been used for treatment of the contaminated soil. Bioremediation of contaminated soil started in November of 1998. Contaminated soil, containing 16,400 to 38,200mg/kg hydrocarbon, was amended with a proprietary bacterial culture, "mushroom-alginate revitalized compost" and mushroom compost (final mixes were 10 to 15% amendments). Some windrows were watered with an "enzyme-containing water", while others were not.

Contamination of the water taken from the ponds and the production wells varied generally between 1 and 6 mg/l. The hydrocarbon content of the exploited water from the wells decreased at first quickly, and after several weeks of operation decreased more slowly. Currently dissolved hydrocarbon content in the water of the draining ponds has decreased to about 200-300 µg/l. As indicator of the water treatment efficiency, the quality of the water allows the growth of plant and animal life in the ponds.

By the end of the year 1999 the hydrocarbon content of the soil has decreased to 4,000 to 5000 mg/kg. At present, there is about 17,000 m³ material in windrows. Because of space constraints windrows had been built higher than what was considered optimal. Therefore windrowed material was re-piled in May 2000 and to 1 – 1.5 m height. The starting concentration of hydrocarbons in this material was about 7,000 mg/kg in June, 2000, while, with post treatment levels being 2,800 and 4,000 mg/kg.

Input concentrations of hydrocarbon for low temperature thermal oxidizer were limited to 10,000 - 15,000 mg/kg contamination, which are similar to those suitable for biological treatment. Blending of the site materials to achieve this treatment range was not permitted by the regulator. Currently alternative treatment approaches are being sought for the materials with very high hydrocarbon contents.

Estimates of remediation costs have risen sharply. The original 1991 estimate was \$1.35 million. The 1997 remediation contract was for \$2.3 million. Current estimates are that a further \$4 million is required. The local authority has not yet paid the contractor as not all windrows have reached the remediation target, and further work on the site has ceased.



Figure 4 Original Site Conditions / On Site Windrow

Contaminated Land – Risk Transfer and Management, Thomas E. Nash and John W. Gallagher, Cherokee International, USA

The key to the successful acquisition and redeployment of contaminated land is the ability to transfer the seller's environmental risk and then to implement an effective, long-term risk management program for the assumed environmental liabilities. In the United States and to a certain degree in Europe, the strict liability that accompanies investing in contaminated properties has historically resulted in more risks than benefits. The potential for unbounded cleanup costs, changing laws and regulations, unknown environmental conditions and third party liability claims created barriers to buying and selling contaminated sites and to effectively managing risk. Over the last decade, the availability of specialized environmental insurance and firms with expertise, experience and capital has made investment in contaminated assets feasible and provided a framework for effective risk transfer and management.

Risk management, within the context of purchasing contaminated land, begins with assessment and selection of candidate sites where the underlying value of the asset, although depressed by the perception of contamination and the uncertainty that accompanies environmental issues, is greater than the actual remediation and risk management costs. Typically, a property with major contamination issues where the cost for cleanup exceeds the property's value is simply not a risk transfer candidate (unless, of course, a seller is willing to contribute capital to the transaction).

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Next, successful investment and meaningful risk transfer is based on thorough environmental and real estate due diligence that involves 1) reviewing all environmental studies, 2) identifying all known contaminants, 3) investing in further study of the contamination if needed, 4) quantifying remediation costs and the inherent uncertainties, 5) conducting meaningful negotiations with environmental regulators and planning authorities and 6) identifying tax incentives and public funding sources that can be applied to the transaction.

As part of a comprehensive environmental risk management program, risk can be transferred from a seller by a meaningful, properly secured indemnity that addresses obligations, claims and costs incurred or that may be incurred at a property as a result of known and unknown environmental conditions. The risk transfer indemnity can cover claims that may accrue both before and after the purchase of a property and includes claims arising as a result of remediation.

A meaningful indemnity is based, first, on the ability to provide adequate capital for direct remediation costs and the host of contingencies that accompany environmentally impaired properties – unfortunately, too few developers have the necessary funds. Second, environmental risk transfer relies on relatively new, specialty environmental insurance policies that are modified to craft coverage to the specific needs of each transaction. Typically, these policies include a cleanup cost cap (also called a stop-loss policy) to address potential cost overruns associated with actual remediation of the known conditions at sites, and pollution legal liability to secure potential exposures associated with unknown environmental conditions and third-party claims.

A number of other types of insurance policies can be added to the two basic types of coverage, including specialty policies for asbestos, underground storage tanks and professional liability and to secure lender and debt exposure. Moreover, insurance can be rolled up with capital to provide a complete risk transfer vehicle where remediation obligations are pre-funded and residual risk is managed by the insurance carrier through a finite risk program.

An overview of specific areas of environmental risk and the risk transfer mechanism relying on a combination of capital and specialty environmental insurance coverages is outlined in more detail in the Table 3. Figure 5 illustrates how these tools can be combined to provide a financially robust and viable project.

Table 3 Risk Transfer Framework For Contaminated Land

risk	Risk transfer mechanism
Cost for Remediation of Known Environmental Conditions	Capital to secure funding for remediation, including contingencies.
Cost Overruns for Known Environmental Conditions	Cost cap (stop-loss) insurance coverage to pay cost overruns above a self-insured retention. Capital to bridge between estimated response costs and insurance attachment point.
Unknown Environmental Contamination	Pollution legal liability (PLL) insurance coverage for unknown environmental contamination that may require remediation. Costs covered range from initial investigation through remediation and long-term monitoring. Capital needed for insurance deductibles.
Potential Third Party Claims	PLL for losses due to bodily injury and property damage claims, including costs for investigation of both pre-existing known and pre-existing unknown contamination.
Officer/Director Exposures	PLL coverage for officers and/or directors pertaining to environmental liability.
Natural Resource Damage	PLL coverage for environmental damage and natural resource damage claims.
Litigation Costs	PLL coverage for costs, including legal fees, to defend against

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	claims associated with environmental matters.
Force Majeure Provisions	PLL coverage for additional response costs due to storms, flooding and other unexpected disasters that may lead to additional costs and delays during remediation.
Regulatory Risk	PLL coverage for risks and increased costs due to changes in regulatory cleanup standards or new information about contaminants even though the site was deemed “clean.”
New Environmental Conditions	PLL coverage for pollution conditions caused by Cherokee or by another party as a result of their use of the property.
Asbestos, USTs, Secured Lender and other Special Risks	Insurance coverage through one or more specialty policies combined with appropriate capitalization.
Uninsured Residual Risk	Capital to secure funding for deductibles, unpaid insurance claims, unforeseen contingencies and other uninsured residual risks.

Below are three examples of actual transactions where Cherokee has implemented risk transfer programs for 1) a closed textile mill, 2) several large municipal solid waste landfills and 3) a portfolio of industrial sites.

- Textile Mill – Cherokee transferred the risk by securing up to \$9.2 million (USD) for remediation of asbestos, lead paint and soil and groundwater contamination. Residual risks for unknown environmental conditions and potential third party claims were addressed via a long-term \$15 million pollution legal liability insurance policy.
- Municipal Landfills – Cherokee transferred the environmental risk associated with the remediation of a series of large landfills and the long-term management of landfill gas and leachate by pre-funding a \$100 million finite risk program that included a renewable \$50 million pollution legal liability insurance policy.
- Industrial Portfolio – Cherokee purchased a seven-asset portfolio of industrial sites and provided a secured and insurance backed indemnity to the seller that included funding multi-million remedial activities and providing long-term liability coverage to the seller.

The ability to purchase and redevelop contaminated land relies on the capacity to transfer risk associated with environmental liabilities. Assets must have a net positive value, after discounting for environmental impairment, to be candidates for risk transfer. In addition, risk needs to be quantifiable to provide the basis for a properly capitalized and secured risk transfer framework.

A certain degree of expertise and experience managing the purchase and sale of environmentally impaired real estate is needed to apply risk transfer to transactions. The most important aspects of meaningful risk transfer are adequate levels of capitalization for remediation and contingencies and the backing of relatively new, specialized environmental insurance coverages.



Figure 5 Cherokee's Risk Management Structure

Industry View On Environmental Insurance, Ian Canham, ICI. UK

The opportunities offered by environmental insurance can be to:

- eliminate or mitigate potential environmental "deal breakers"
- optimise transaction values/facilitate transactions
- reassure financiers and allow capital to be raised
- protect from future environmental liabilities negating need for contingent reserves
- underpin contractual responsibilities
- enhance public relations
- influence stock market perception
- utilise insurers credit ratings and risk appetite
- act as a catalyst or a facilitator.

Reasons why a company might not buy insurance could be that the insurable risk is seen to be small compared with balance sheet. The problem does not have a public relations issue. The insurance available will not hedge risk, or the premium is cost prohibitive. Finally the contractual terms may be sufficient. Insurance is not always applicable and this should be carefully considered.

A number of risk transfer products are available. A European EIL (Environment Impairment Liability) market was first launched in 1991, but it failed because: wordings were inflexible, the underwriting process was burdensome and lengthy, the limits of indemnity were low, and insurers refused cover for sites with EIL risks and offered coverage for sites with no risks. The current EIL market is large and growing with reinsurance commitment and competition. In 2001 environmental insurance premiums were \$1.7 billion globally, and \$75 million in Europe out of a total non-US total of \$100 million. The total premium capacity in Europe is thought to be \$400 million.

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Insurers are now flexible in designing coverage. Bespoke policy wordings are available. Rapid decisions are made on underwriting. Longer terms of coverage circa. 10 years⁷ are available. The premiums can be paid by the transaction, and the policy can be assigned (e.g. to site purchasers). There is aggressive coverage of known risks. Insurable risks include:

- on site/off site remediation costs,
- remediation cost cap,
- third party bodily injury/property damage,
- legal defence costs,
- business interruption and delayed construction costs, and
- collateral value loss for banks.

There are Alternative Risk Transfer products (ARTs) which are combinations of banking and insurance. Insurers may be able to take more risk than in a standard risk transfer programme as the premium is paid in advance, which can have potential tax advantages. They have a negative cash flow effect and can be combined with traditional EIL products.

When considering insurance, the key factors are with whom the insurance is placed. Despite policy flexibility and broad coverage, extreme care must be taken in ensuring that any policy purchased meets the risk requirements of purchaser. Naturally, insurers would rather take the premium and accept no risk. It is the purchaser's responsibility to demand value. *Don't be afraid to walk away.* The key questions to be asked include:

- Does the policy provide coverage for change in law?
- Is the policy assignable?
- Does insurer have right to cancel?
- Does the policy match any indemnification?
- Are known environmental conditions excluded or insured?

Those seeking EIL insurance should be prepared to fully leverage their buying power. IL Insurers are the same Insurers who underwrite your other corporate risks, therefore, insurers may already have premium income from your organisation. However, what is possible is fundamentally constrained by what is acceptable to the re-insurers. Developing relationships is also helpful in obtaining both access to EIL cover and discounts.

Insurers will have a multi-discipline team which the client must match. A team must include:

- risk manager: for purchasing expertise,
- lawyer: for policy/indemnity review,
- environmental consultant: for risk review,
- finance: valuation.

In CEE EIL Insurers apply the same principles when underwriting a site in Western Europe, Central Europe, Asia or the United States. Some sample views of insurers are that:

- "Pollution Liability is the only product being sold"
- "No cost caps can be sold due to inadequate local due diligence"
- "Opportunities will arise out of 10 CEE countries going into EU, mainly Brownfield development"

Creative, cost effective and appropriate environmental solutions can enhance a company's ability to transact business and limit exposure. However, insurance does not remove a company's legal liability and/or moral obligation to carry out remediation.

⁷ Reinsurance stipulations drive term length, the re-insurers are Swiss Re and Munich Re

The Use of Guaranteed Remediation Programs in Europe, Jeffrey S. Burdick and Ido Croese, Arcadis, The Netherlands

ARCADIS has been using guaranteed, remediation schemes since 1994. These efforts initially involved projects valued at less than 1 million Euro, and were often completed without insurance, but guaranteed internally by the organization using cost plus fixed fee contracts (or similar). The initial projects were typically Brownfield sites or other derelict properties where interest from development companies spawned the efforts. The size of these projects has increased over the past eight years of implementation, and they currently average > 5 MM Euro in the United States. Many of the newer sites are active industrial facilities or former military bases (for the Department of Defense). The majority of these projects now utilize some form of insurance in order to provide a guaranteed contract to the client. A high percentage of these guaranteed remediation program sites rely on the use of innovative in-situ techniques to more quickly and cost effectively remediate a site. Average savings vs. reserves (based on traditional remedial scenarios such as pump and treat or soil excavation) at GriP program sites has increased from approximately 0.5 to 3 million USD/Euro over the past 8 years. Not all situations require the technical finesse of utilizing in-situ techniques, and there are certainly sites where the creative use of contracts and subcontractors are the drivers.

ARCADIS is currently in the process of implementing this process in Europe at 16 sites located in Belgium, The Netherlands, Germany and Poland. In our experience, the business needs of multi national clients are often the driver to provide this type of service.

Many sites will have elevated cleanup costs (environmental liability) based on conservative estimating procedures that utilize more traditional cleanup methods. These elevated estimates are in many cases poorly defensible, and will preclude the acquisition, sale and/or development of these properties. Historically, the buyers or lenders, and corporations and sellers have had to take some risk in these situations by creating escrow funds or utilizing indemnification clauses in contracts. Due to the competitive nature of the market this is changing however, and remediation contractors and insurance companies are taking on more and more of this risk themselves. For example, a GriP type contract can provide the contractual certainty and lubrication to allow a deal to move forward. The use of cost cap insurance will protect the buyer/seller from any miscalculations regarding cleanup estimates and the typical change orders that can be a part of remediation projects. The liability to perform and achieve closure is placed squarely on the back of the consultant.

The purpose of a guaranteed fixed price program is to provide a fully indemnified fixed cleanup price for remediation at a specific endpoint – usually regulatory closure. Historically, this approach has been applied:

- to facilitate property transactions,
- to optimize property values (remove stigma),
- to improve the company balance sheet (i.e. “reserves mining”),
- aid in litigation disputes, and
- to provide a foundation for comprehensive and cost effective remediation precluding redevelopment.

Ultimately, these sites have financial drivers and an urgency typically created through a business need or venture.

There are several key components to an insurance-backed remediation project: cost estimating, insurance and contracts. Cost estimating is a time consuming process where assumptions have to be made when data is absent. Additional description and aspects of the cost estimating process include:

- a uniform evaluation of future investigation, remediation and operation and maintenance requirements,
- a probabilistic cost estimate using variable scenarios: typically a distribution of costs based on 25%, 50%, 75%, and 95% certainty (worst vs. best case scenarios), and

- full indemnification from consultant/contractor. This indemnification means that the liability for the pollution has been transferred to the consultant/contractor. In the case of a GriP, we are not buying the land, just inheriting the liability (for example, if a plume moves off site during a GriP remediation it is the responsibility of the consultant/contractor to remediate it).

The contracts used in a guaranteed remediation project are structured for the individual situation and legal system of the Country of implementation. Components of the contract include:

- a means for securing project price (i.e. hard numbers),
- a definition of the roles and responsibilities of the “partners”,
- a payment schedule based on achieving project milestones with retention sums until completion: for example, approval of a remedial action plan, installation of a system, demonstrated removal of certain percentages of contamination, and receiving written regulatory closure, and
- transferability of the guarantee to future owners.

Remediation methods and timeframes are proposed based on the client’s needs and these methods are typically previewed and discussed with the local regulatory authorities during contract negotiations.

While using innovative remediation methods often lowers the overall project price, the use of insurance ultimately supplies the guarantee. The most important component of the insurance is cost cap insurance. This covers remediation cost overruns relative to the Remediation Cleanup Plan. The insurance backing lasts anywhere from 10 to 30 years, depending on the country of implementation. The premium to include insurance cost 5 to 10% of the total project value prior to September 11, 2001. However, since this time, the premium costs have raised to 10 to 15% of the project value.

The US has a longer history of environmental regulations and hence the market is more evolved than in most European countries. This has created a tremendous amount of competition to develop more cost effective cleanup techniques. These techniques are typically more readily accepted in the US. Using innovative techniques in parts of Europe can therefore be a hurdle that may require more research, pilot demonstrations and patience. There are also differences in the environmental laws in individual European countries. These differences may be even more striking in Eastern and Central Europe where countries have recently become part of the EU and the regulations are in a state of flux. Another difference is in the types of insurance that are offered. In both the U.S. and Europe, the primary form of insurance is cost cap and this is available in both situations. However, in the U.S., in a much more litigation –prevalent society, there is also pollution liability insurance to protect against undiscovered future contamination, third party claims and regulatory re-openers. This form of insurance is not offered in Europe, but can still be handled in the contractual terms developed for a given situation. Ultimately, there needs to be some regulatory driver from the authorities (like a Consent Decree or Order) in order to make a GriP type offer worthwhile over traditional time and materials estimating.

Environmental Contracting Strategy - An Industry Perspective, Terry Walden, BP International, London

BP International, both in the States and Europe, has tried a variety of contracting arrangements dealing with soil and groundwater issues over the past few years. The purpose of this paper is to share these experiences and point out lessons learned. It should be mentioned that the author did not ‘canvass’ other industry members to obtain their collective wisdom on the topic. The speaker pointed out that this talk only represented BP’s perspective although, hopefully, this is a surrogate for the industry as a whole.

As a clarification, the contract relationship referred to in this paper is generally between a ‘consultant’ and BP, although in some instances, suppliers can serve in the dual role as ‘consultant’ and ‘contractor’ (i.e. ‘advice-giver’ and ‘implementer’ of the work). In the more common scenario, BP

generally contracts with a ‘consultant’ who, in turn, subcontracts a ‘contractor’ to perform the physical work.

Generally, contracting strategy has evolved over time, with three distinct contracting styles being used, following the chronological order below:

- Fragmented approach
- Alliance partnership
- Preferred supplier.

The *Fragmented Approach* refers to a situation where every business unit (such as a retail unit in a single European country) contracts with their own suppliers in a decentralised fashion, generally on a project-by-project basis. Generally, this involves use of smaller consultants (or single offices of larger firms) where there is no central Procurement function to co-ordinate work and contract terms across business units. In this type of contract arrangement, there is little consideration given to ensuring that the business objectives of both client and consultant are mutually enhanced, and ‘hire and fire’ decisions generally rest with the project manager. Efficiencies of scale are therefore not realised, although this does not suggest that price is necessarily higher than if a more centralised approach were adopted.

The *Alliance Partnership* refers to a complete integration of the consultant with the client, to the extent that the consultant becomes almost a pseudo ‘employee’ of the client. Once the alliance contract is signed, the work is given to the consultant without individual project bidding. Generally these contracts have a multi-year basis, although the cost structure may be negotiated annually. When ‘partnering’ was first introduced, the feeling was that the arrangement led to a ‘win-win’ situation, with both client and consultant having overlapping business objectives, leading to cost efficiencies that both parties could capture (scale efficiencies on the part of the client and reduced marketing/bidding costs with higher workload utilisations on the part of the consultant).

The *Preferred Supplier* is a model that is intermediate between the fragmentation approach and alliance partnership. Like the alliance, a single – or perhaps two –supplier(s) are selected for a geographic area, but the basis for selection is driven primarily by cost, after a pre-qualified list of suppliers is identified. Rather than placing ‘trust’ in the consultant to deliver a product at best value to the client, this premise is tested and verified in the marketplace. The mechanism can be either a traditional bidding process, such as hard copy bids with specific prices based on labour cost multipliers or unit rates (quotes for specific tasks, such as desktop studies or risk assessments), or more innovative schemes, such as reverse auctions using the internet.

Lessons Learned

BP’s business units generally start out using a fragmented strategy since project-by-project bidding is usually the easiest approach to justify and implement. In some European countries it is still practiced and tends to work well where there is diverse set of consultants with comparable skills and experiences. It can still serve as a way to obtain lowest third party costs although it may be at the expense of higher internal man-hours to solicit, analyse and award each bid.

The alliance partnership had been refined to a high degree in the States by BP in the mid to late 1990s. The model used put both client and contractor personnel in a joint venture whose net worth could increase by remediating and closing sites at prices less than the provisions that were established at the start of the 5-year joint venture contract. The work was then sole-sourced to the joint venture at prices based on a multiplier of labour man-hour rates that were negotiated each year. The consultant could only be terminated for performance, and not simply for convenience or at BP’s discretion. At the end of the 5 years, the consultant received a high level payout based on the accumulated net worth of the joint venture.

While the partnership brought stability and consistency across the portfolio of sites, it lacked the ability to test the cost structure in the marketplace. In subsequent bids submitted under the Preferred Supplier strategy the alliance consultants, who in the partnership would argue for only a few percentage points reduction in the multiplier annually, submitted competitive bids with multipliers that were up to 25% less than that in the alliance. The take home message learned is that a client cannot out-negotiate the marketplace when it comes to agreeing costs with a supplier.

The latest manifestation of implementing a Preferred Supplier strategy is the internet auction (see Figure 6).

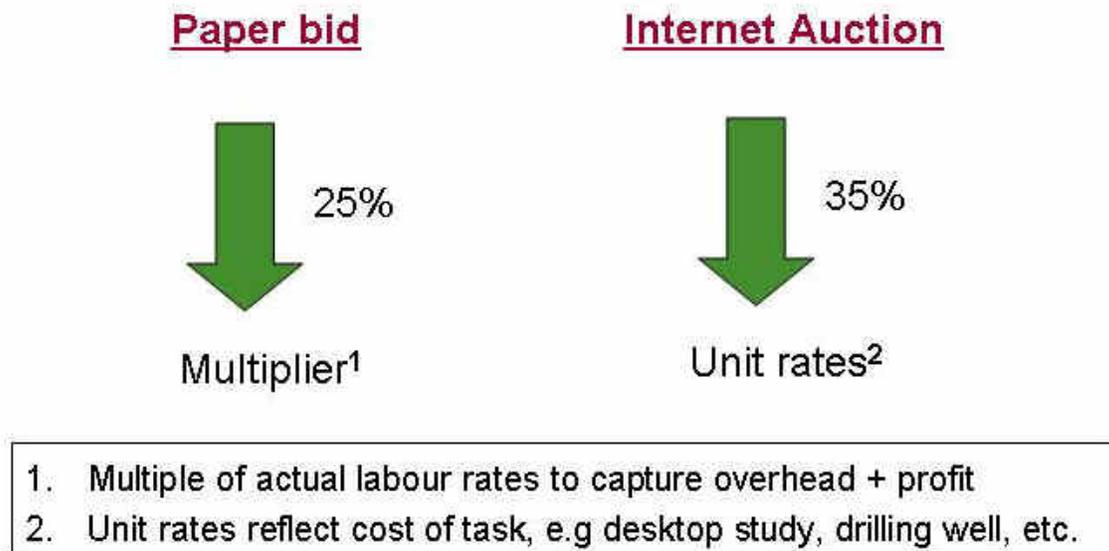


Figure 6 Indicative Savings from an Internet Auction Carried out by BP

To some degree, this approach is only workable if the client firmly believes that the work is a ‘near commodity’ business whose cost can be constructed through a number of unit rate assumptions, such as specifying number of analytical tests and cost per test at each site, cost per monitoring well, etc. Under the reverse auction scheme, a number of pre-qualified bidders are provided with the unit rate structure in a form such that they can quickly adjust their overall bid based on a few modifications to the unit rates. The bid is then conducted over a 30-minute period, where each supplier submits his quote and bids ‘downward’, obtaining feedback only on how his bid relates to the lowest bid (while not knowing the specific quotes of each competitor). If a bidder submits a quote in the final minute, the auction continues for an additional minute so time cannot be used as the determinant of the winning bid.

Innovative Contracting, Matthias Sumann, Tauw, The Netherlands

The presentation is based on the report of the SKB-project ‘Innovative contracting’ (*Prestatiebestekken*) web link?? It is common practice in the Netherlands that the contract between the problem-owner and the remediation based on specifications written by a consultant to the problem-owner. The execution is more or less prescribed in detail and the contractor describes the works according to the tender-specifications and offers them for a certain price in a tender. Since the works are prescribed in detail the price is the deciding aspect in the decision for or against a certain contractor. In the last five years, a new approach to the whole process of contracting has been

developed, as an alternative to this “traditional” contracting approach, which aims to make use of the know-how and experience of various contractors in the market.

There are several problems are common to soil and groundwater remediation projects that are not sufficiently addressed in the traditional way of contracting.

1. The chosen approach in complex projects is limited by the knowledge and experience of the problem-owner and the consultant.
2. Since the price and not *value* is the deciding aspect, development of new approaches is not a great advantage in the market because development costs make contractors more expensive.
3. With the introduction of *in situ* techniques remediation approaches rely on longer remediation periods and processes in the soil. Therefore, higher risks are linked to the feasibility of the new approaches.
4. Remediation projects are increasingly a part of bigger redevelopment projects so the remediation has to be combined with other works, which increases the need to finish remediation in the predicted time frame.
5. The problem-owner carries all the inherent risks. The key interest of the executing partner is to carry out the remediation as well as possible following the detailed design but not necessarily reaching the remediation targets.
6. There is a general distrust in the tendering process. Since the price is usually the deciding aspect, it is common practice to look for mistakes in the tender-specifications that enable the future additional works. By offering at a low price, the contractor still can make profit with the additional works that are not offered in concurrence. Furthermore, if a remediation strategy does not work, there are often difficult discussions between the consultant and the contractor, e.g. has a mistake been made, if so where and by whom. These are usually not productive nor helpful in solving the problem.

An alternative approach to describing the remediation action in detail in a tender specification is to reduce the level of prescription for the desired remediation and instead focus on whatever remediation targets are required by the regulators and according to the policy or legal claims of third parties. This information is supplemented with the limiting conditions and wishes of the problem-owner and other concerned parties. It is then up to the contractors tendering to come up with the best solutions to the problem within the given framework. In exchange for more participation and more control by the contractor on the remediation process, payment is made depending on reaching remediation targets. This way it is possible to:

- get all the creativity out of the market there is;
- make all of the executing parties responsible for arriving at the remediation targets so that all parties have the same key interest;
- enable creative and innovative contractors to show and prove their knowledge and experience;
- get a better picture about the risks involved by including the contractor in the risk discussion;
- pay for good performance in design and construction, only.

These approach appears to an attractive way of contracting for problem-owners and innovative contractors. However, the experience of the last four to five years have shown that the reality is less positive than the vision. Consultants acting for problem-owners tend to direct planning in a way that only highlighted the desires of the problem-owner. Little care was taken of a realistic estimate of what a contractor (or a combination of a contractor and a consultant which is usually formed for these projects) can in reality offer. Usually, the call for tenders only consists of a short description of the targets of the remediation (expressed in concentrations and dates), limiting conditions the stringent requirements, the wishes of the problem-owner and the sanctions if the targets were not reached. This way, all the risks are on the side of the contractor.

Furthermore, the reasons for the various wishes, requirements and sanctions are not clear to the contractor and information on the context is very limited. Thus, the contractor does not have good information on the whole situation so that he cannot plan the remediation measures in the wider context.

Additional investigation is usually necessary to obtain the specific information for certain remediation approaches. The problem-owner on the one hand usually thinks that he spent enough money on investigation. The consultant on the other hand feels that his investigation is criticised as not sufficient. Additional investigation, therefore, is a critical issue that can lead to worsening relationships between problem-owners their consultants and contractors. Consequently, the contractor does not fully address this issue so as not to spoil a relationship with the possible client. The result is that the contractor excludes a lot of uncertainties in his tender to have a stronger stand in later discussions.

Another hindrance for the success of the new approach is that almost only technically difficult projects (e.g. LNAPLs and DNAPLs, complex industrial sites) or complex situations with a lot of stakeholders (e.g. city centres) are subject to the new approach because the risks and uncertainties are very high and the problem-owner finds the buy-out in those situation most attractive.

Therefore, the contractor is not inclined take risks by employing new remediation techniques and, as a result, only proven techniques are offered. Since the risks for the contractor are often high and sanctions are often unacceptable, he is not open to hint at mistakes, insecurities and hidden risks that he detects in the available information. The contractor might be able to use these mistakes in later discussions not to be hold responsible if targets are not reached. This means that there is still a lot of distrust and little co-operation.

Another issue that leads to problems is timings of payments. The contractor invests in the beginning when the system has to be installed and started. However, the problem-owner wants to pay for performance, which means at a (usually much later) point when the targets are really reached. Finally, the decision for the contractor is still very much based on the price and to a lesser than desired extent on the ratio of price and quality.

As a result, there is a lot of frustration with a new approach on all sides. The problem-owner does not tackle the problem in the most creative and co-operative way. Also, it seems that the contractor is only looking for mouse-holes to sneak in if problems occur. The innovative contractors on the other hand cannot prove their quality, have to stick to proven techniques and feel confronted with an unbearable load of responsibility. Because the process is not open and honest, possible risks are not addressed that can lead to difficult situations afterwards. Usually, the problem owner stays responsible for the problem in the first place and discussions afterwards are very frustrating because the possible risks were not properly addressed in the tendering phase.

Hence there are three major factors that have to improved to let this alternative contracting approach succeed:

1. good information
2. open communication between contractors and problem-owners
3. trust and co-operation

As self-evident as these points may seem to be, they *really do* mean a major change in the culture of contracting.

Good information starts with the information that the problem-owner gives away in the call for tenders. The information should be as complete as possible. Furthermore, the background of requirements and wishes should be explained to give the contractor the chance to come up with creative solutions, which might make the limitations less threatening. Also, the reasons for the aims of the remediation should be explained in detail. The contractor can then design the approach and can come up with flexible innovative solutions taking into account the effect on the whole situation.

Effectively the problem-owner must trust the invited contractors, which will be a first step into an open communication. This can be supported by acknowledging that the costs of the contractor in the tendering and preparation phase for this alternative contracting route are much higher than for the traditional way, for example by paying part of the costs of all invited contractors for the contracting phase. These costs are comparatively small in comparison to the total costs of the remediation but are a valuable signal towards the contractors.

It is important to inform right from the start how the whole process of contracting will be done, what the important aspects are and how the tenders will be evaluated. This means that, in place of a rather short call for tender just mentioning the remediation targets and limiting conditions, the call for tender must contain the following aspects:

- description and planning of the procedure of tendering and selection;
- the way of payment and sanctions;
- quality management of the problem-owner;
- available information of the situation;
- requirements, wishes, limiting conditions with background;
- monitoring of performance;
- required parts in the tender;
- evaluation criteria.

It is clear that a lot of thought has to be put into the new way of calling for tenders. Also, the problem-owner has to be very clear about the reasons why he wants to go into the more open process of the new approach and what the implications are. But the big advantage is that the contractors can decide on a very good base whether they can satisfy all the criteria and whether it is worthwhile to take part in the tender process. This saves time and effort for *all parties*.

A crucial point deciding about the success of the new approach is to evaluate all possible risks. The problem-owner should make clear that he appreciates if the contractors also spend a lot of thought on the possible risks and communicate them openly. A problem of open communication is that contractors do not want to give away their know-how in the presence of clients. Therefore, bilateral meetings with the single contractors are necessary to give the contractors the possibility to show their expertise. In these bilateral meetings, the question of necessary additional investigation must be addressed because this question is closely linked to the question of possible risks. For the sake of objectivity, the issues of risks and additional investigation raised by all taking part have to be summarised. All the contractors will be given the summary, which of course does only contain the questions but not the offered solutions.

A last crucial point is that both the problem-owner and the contractor accept responsibility for arriving at the remediation targets. If the contractor is convinced of his expertise, then accepting responsibility to certain extent should not be a problem. On the other hand, the problem-owner must accept that he still stays responsible and that the will to get rid of all risks and responsibility does usually lead to legal procedures, endless discussions and low quality and creativity of the solutions.

Tackling the Challenge of Contaminated Land in Central and Eastern Europe: Contractual Apportionment Of Liability, Owen Lomas, Allen And Overy, UK

Most European jurisdictions now impose liabilities, for example on site owners, in some form to recover the costs of remediation of contaminated land. Many have specific legal provisions. There are a number of the key issues which arise when considering how to apportion such liabilities contractually on sale and purchase of share/business assets which include land.

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A long standing and often used caveat for vendors has been that information is provided on an “As far as the Seller is aware”. In this situation the objective protection of the purchaser is diluted to one that depends on the knowledge of the Seller. Another expression used is that the seller warrants that there was “No breach of laws or consents”. From the purchaser’s point of view, this warranty also will not necessarily cover contamination. A specific warranty needed is needed to cover contamination issues.

The scope of what might be covered under a specific indemnity are the “Protected Matters” and the “Protected Losses”. “Protected Matters” might include:

- Scope of contamination e.g. soil, water, on-site/off-site, seller only, post completion contamination for limited period

“Protected Losses” might include

- Losses, costs, expenses, liabilities (including professional fees etc)
- Consequential losses (e.g. loss of profit, business disruption, punitive damages).

When discussing indemnities it is also important to consider what would trigger a liability. Early triggers are preferable for Purchaser to take “voluntary” action e.g. actual or anticipated proceedings; “more likely than not that proceedings would be brought if regulator knew of contamination”. Later triggers are better for the Seller (e.g. final order, notice, decree).

Indemnities cover “Protected persons”. These might be the Purchaser **and** its directors, agents, employees, third party contractors and a subsidiary who may subsequently control land: should include “Members of the purchaser’s group”. It may also be important to consider the usefulness of assigning the indemnity, for example to a subsequent purchaser. However, there can be problems if the party suffering loss has already assigned benefit of the indemnity. A possible solution is to widen “protected persons” to include “the First Buyer”.

The usual limitations to indemnities are financial caps and time limits. However, indemnities are also affected by political risks (described above). A compromise position is to refer to: “laws enacted but not yet in force”. Re-enactments and consolidations may also be possible provided that there are no substantive changes. Further limitations include:

- “prospecting” also imposes a limitation on indemnities. Prospecting is where an individual or organisation is looking for contamination in order to claim under the indemnity (excluding reasonable and legitimate activities).
- Whistle-blowing
- acts or omissions (including change of use/development), the approach is dependent on jurisdiction’s contaminated land regime (for example whether it uses absolute versus risk based standards). A solution to this is to limit indemnity so that it does not cover contamination “to the extent it has been caused by the acts/omissions etc. of the purchaser”.

It is also worth considering indemnities where both the seller and purchaser make contributions, via a sliding scale, fixed contribution, threshold amount. The rationale from the seller’s point of view is to discourage purchaser from bringing claims.

Indemnities include clauses about the conduct of claims, for example setting out notice requirements and responsibilities, and also about proving the claim. Usually the onus of proof is on the Purchaser (unless there is an express contrary provision). However, this is problematic if

- the Purchaser carries on same industrial process
- indemnity is limited to contamination caused by seller and not third parties (e.g. seller’s predecessor)

Possible solutions are to carry out a baseline survey and to agree a common set of presumptions.

In some cases indemnities may be disputed. Dispute resolution using such as arbitration or third party experts is usually cheaper and faster for the Purchaser. Expert determination is likely to be favourable to Purchaser

Counter – indemnities aim to protect Seller against residual liabilities e.g. contamination arising after completion or from pre-completion contamination where liability triggered by Purchaser.

In conclusion, indemnities pose many pitfalls for the unwary. However, they can provide real protection and unlock deals. Increasingly they are seen as a real value adjusting mechanism.

Effect of New International Accounting Standards on the Need for Provisions, Elek Votin, KPMG Hungary

The International Accounting Standard– Provisions Contingent Liabilities and Contingent Assets (IAS 37), have significant impacts on companies with contaminated land or potentially contaminated land holdings. IAS 37 was approved by the IASC Board in July 1998 and became effective for financial statements (e.g. balance sheets) covering periods beginning on or after 1 July 1999. IAS 37 prescribes the accounting and disclosure for all provisions, contingent liabilities and contingent assets. The principles outlined therein are therefore applicable to accounting for site restoration costs.

IAS 37 defines provisions as liabilities of uncertain timing or amount. A provision should be recognised when:

- an enterprise has a present obligation as a result of a past event;
- it is probable that an outflow of economic benefits will be required to settle the obligation; and
- a reliable estimate can be made of the obligation.

The amount recognized as the provision should be the best estimate of the amount required to settle the obligation.

IAS 37 requires companies to describe the nature and timing of provisions and contingent liabilities, the uncertainties surrounding these, to provide a detailed roll-forward of the provisions by category and to describe and detail the financial effect of contingent liabilities.

The issues faced by companies faced in applying IAS 37, including:

- difficulties with the measurement of the provision due to the usually long time frames involved and the effect of changing technology;
- the implications of constructive obligation in the context of social responsibility statements made by major companies;
- how the change in discount rate used to discount the liability should be treated;
- whether the offset charge for the provision for decommissioning costs should be made to the respective asset;
- how the subsequent change in the provision should be treated; and
- the effect of setting up a fund to cover the cost of future restoration costs on the amount provided.

The criteria to determine the treatment of liabilities/contingent liabilities is shown in Table 4.

Provisions are derecognised (i.e. removed from the balance sheet) through use (i.e. they have been used for restoration) *but only* for expenditures for which the provision was originally recognised (as a result, such expenditures do not affect income) or through reversal, i.e. if an outflow of economic benefits is no longer probable. Reversal affects income.

Table 4. Recognition Criteria for IAS37

Liability Type	Likelihood	Financial Statement Action
Liability	virtually certain	recognise
	probable	recognise
Contingent liability	probable, but not reliable	disclose
	possible	disclose
	remote	do not disclose

Note: “virtually certain” means a probability of 90% or more, “probable” (i.e. more likely than not) 50% or more, “possible” less than 50% and “remote” less than 10%

The provision should be calculated taking into account:

- how measurements are made,
- best estimates of costs to restore the site,
- inherent risks and uncertainties,
- discounting,
- expected reimbursements (e.g. insurance), and
- expected gains from disposal of assets.

Disclosure must include:

- description, timing, uncertainties,
- detailed roll-forward, and
- financial effects of contingent liabilities.

Following is an example of disclosure of an accounting policy for the treatment of provision for environmental expenditure (extracted from MOL Hungarian Oil and Gas Company 2001 financial statements):

“Immediate provision for expenditure existing condition from past operations recognise when identified. Measurement based on current legal requirements and existing technology. Provision when probable or certain reasonably estimated.”

Following is an example of disclosure of an accounting policy for the treatment of provision for field operation suspension liabilities (extracted from MOL Hungarian Oil and Gas Company 2001 financial statements): “..... present value estimated future cost of abandonment..... estimates current legislative requirements, technology, and price levels. Cost of abandonment is capitalized as part of the oil and gas asset and depreciated”

The Risk Approach, a Step by Step Plan for a Clean Valuation, Bas van der Griendt and George G.M. ten Have, Royal Haskoning. The Netherlands

In the Netherlands no one would accept the valuation of a ruin under the premise of it being in ‘perfect building condition’. At the same time, however, we do find it acceptable for property valuers to appraise contaminated business parks, industrial sites etcetera on the basis of ‘notional clean soil’.

Contaminated property depresses prices, carries financial risks and can influence the size of the market, i.e. the marketability of immovable property, land and buildings. Two issues in particular that play key roles in this respect are the probability and financial consequences of:

- the existence of soil contamination
- whether or not to remediate

- adverse effects on use value.

Hence the questions that the property valuer needs to answer should he wish to ascertain the value of a contaminated object are:

- Is the soil contaminated?
- Should it be remediated?
- Will its contamination have an adverse effect on the use value of the site?

The valuer's main problem is twofold: he is neither sufficiently versed in soil contamination nor can a soil consultant be of much assistance since in most cases the consultant will feel that no adequate soil survey will have been conducted. Der Griendt and ten Have suggest using a risk based approach as a means of valuing contaminated property. They suggest that it is possible to determine at an early stage in the soil survey how much environmental damage to deduct from the definitive value of the contaminated property. This valuation method differs from the commonly used 'traditional' cost approach by not only taking account of the survey and remediation costs but also assessing the need for remediation and the risks closely linked to soil remediation. Their approach is reviewed in more detail in *The Appraisal Journal* January 2003. It includes five different steps.

Step 1

Valuation of the immovable property on the basis of 'notional clean soil' in the usual way with the aid of the usual valuation techniques. This can be a sales comparison approach, an income approach, or a cost approach.

Step 2

Valuation of the direct damage, including building damage and damage as a result of use restrictions. Soil contamination can be a reason for limiting the property's uses temporarily or even for longer periods of time, which can lead to lost income. It can also be a cause for damage to underground infrastructure, cables and pipes, the sewer system and foundation. Building damage and damage as a result of use restrictions are valued using a simple environmental risk checklist (ERC) as part of the risk approach.

Step 3

Valuation of liabilities and obligations with respect to the contaminated soil and/or groundwater. This may have to do with one's duty to conduct a survey or undertake remedial action. It is important in this respect to differentiate between legal and contractual liability.

- The legal liability is based on national legislation (e.g. the Dutch Soil Protection Act - Wet bodem-bescherming Wbb). One of the main questions concerned with soil pollution is whether or not someone can be required to take action.
- The position between buyer and seller is not only settled in a contract but also based on national legislation. It concerns, for example their mutual obligation to inform each other about a possible soil contamination. Conformity and non-conformity of the property plays a major role.

Furthermore, questions are raised like whether or not a building licence and/or a permit will be given according to the environmental Management Act. If not, then there are additional use restrictions.

Step 4

Valuation of the costs and risks of soil survey and remediation. This has to do with the costs of field and lab work, removing, transporting and processing contaminated soil and pumping up, treating and discharging contaminated groundwater. Furthermore, uncertainties in the survey and in the clean-up,

as well as the related financial and other risks, also play a role. A difference can be drawn between the measuring risk, cost risk, norm risk, residual risk and time risk, a few of which were described above. Risks are 'the undesirable effects of a certain activity or event connected to the chance that this will happen'. For the distinguished risks and for risk approach the three following questions are always asked, based on regular risk analysis:

1. What can happen? (scenario s)
2. How likely is it that it will happen? (probability p)
3. And if it happens, what are then the consequences (effect e)

As such, it is a very technical oriented definition. Psychological research however shows that in many cases not the probability but the controllability is the key to determining risks to executing or undergoing certain activities and events.

Step 5

Valuation of the stigma-effect. That is the drop in value of the property compared with the same property in a non-contaminated condition, in so far as that is not caused by recognisable costs and risks that occur in response to the contamination. The stigma-effect (SE) is considered to be a multiplier for the risks (R) involved:

$$SE \times (R_m + R_c + R_n + R_r + R_t)$$

Note: in many cases however, stigma has little relationship to remediation costs.

At the moment stigma, risks and risk defining factors concerning remediation costs are subject to further scientific research. And although the risk approach may not be completely finished yet, it is a first move in a new direction, it proves to be an important instrument for valuers as well as for soil consultants. It helps them to communicate with one another.

Industry Due Diligence In Real Estate Transactions, Ir. J. G. Kruisweg, Akzo-Nobel NV, The Netherlands

Due Diligence Assessment (DDA) consists of a taxation of the real value of a facility and/or business. It should be executed for all property transactions including long-term leases. In general property transfer decisions are based upon arguments like growth, profit improvement, competitiveness, diversification and so on. The DDA should reduce the risks of these decisions to a minimum and should establish a clear zero base situation.

Normally the DDA is executed by a team comprising management, financial and technical staff. This team is often supported by outside consultants. To establish the value of properties and installations a *Technical* DDA is an important part of the decision process. Apart from existing potential claims from customers, workers and pension funds the environmental liabilities may comprise an important amount of money.

The target of the Technical DDA is to discover if environmental liabilities are existing and should result in a rough estimate of the potential costs for these liabilities. The cost estimate is used in the final negotiations to establish the take over price. Apart from the environmental liabilities the Technical DDA should also establish the value of existing facilities and its fitness for future use.

The environmental DDA comprises the assessment of:

- legal compliance
- health, safety and environmental performance
- technical and maintenance status of the sites
- soil and groundwater quality

In collecting the data it is of high importance not only to use today's information but also to use the historical data about the former use of the property. Historical activities may have caused costly liabilities. In Eastern Europe legally the requirements are more and more comparable with Western Europe. The development of European rules and Phare and Tacis activities is supporting this development. However, in dealing with authorities dualistic feelings on their side are experienced. A strong emphasis on liability issues may influence selling prices of state owned properties. On the other hand if the new owner takes care for the problem more money and know how is possibly available. The buyer is wrestling with the problem to estimate the cost consequences of the long-term liability bought. However this buyer problem is not a specific Eastern European issue.

All these considerations put a lot of pressure on the quality of the Technical DDA. If pollution is found remediation costs are highly influenced by remediation technology possible. Independent from legal requirements the estimations of the long-term liability costs are influenced by factors as Natural Attenuation Potential, vulnerability of the surroundings and so on. Therefore the Technical DDA is a dynamic investigation to be executed in a (too) short time frame.

In the finalisation of the negotiations between the partners important differences of opinion about the height of the environmental liability costs may rise because the consequences and risks of found pollution are judged differently. The buyer should try to make a fair judgement of these costs. Using maximum values may kill negotiations.

3 General Meeting Findings

Many delegates felt that the expansion of NICOLE's meetings both to the countries of Central and Eastern Europe (CEE Countries) and to wider topics such as financial risk management were worthwhile developments. The CEE candidate countries set to join the European Union over the next few years are faced with an enormous legacy from the past in terms of contaminated land and efforts and costs associated with land management.

Clearly, remediation requires investment. There was also disappointment that while a lot of advice was on offer from EU countries, with the exception of the former DDR, there was little hard investment in brownfield remediation. On the other hand the value of the investment in land remediation in the DDR was questioned, given that huge amounts of money had been spent, yet economic activity remained depressed. Some CEE delegates expressed the view that in some cases new legal frameworks seemed to shifting responsibilities for State-owned polluting industries operated in the Communist era onto new site owners and local authorities.

For companies investing in CEE countries, the rapidly changing regulatory and liability policies, particularly in the Accession States create some significant uncertainties with regard to financial risks, in part because of uncertainties in how contaminated land will be regulated and liabilities assigned in the future. Therefore, many companies moving into CEE countries prefer greenfield sites. On the other hand there are also some significant opportunities. In many CEE countries there is a larger proportion of former industrial derelict land in city centres or close to major conurbations. In EU economies these are typically the sites with greatest economic potential for redevelopment projects. However, while organisations such as the EBRD are willing to invest in projects, these projects still have to be economically viable. The scarcity of money and the changing contaminated land policies in CEE countries may create uncertainties that make all but the most lucrative of projects seem too high risk. In a number of countries there are *some* mechanisms to transfer financial risks, for example via insurance or re-insurance. These mechanisms have not yet become widely available in CEE countries because of these uncertainties, compounded by a situation where contractual law in general is still developing. Indeed risk transfer mechanisms in CEE countries were described as "embryonic".

Stabilising contaminated land regulations and policy as regards liabilities is likely to be a significant step in CEE countries in creating the conditions favourable for risk transfer and inward investment. However, as a salutary point, CEE countries are also in competition with countries with yet cheaper labour.

It was felt that NICOLE offer much of potential use to CEE countries, and also that CEE countries presented new opportunities, but that these were constrained by the uncertainties in contaminated land regulation, liabilities and contract law in general in these countries. NICOLE does offer opportunities for the development of collaborative projects, for example developing standardised terms and conditions for remediation project contracts.

Some of the NICOLE Industry Subgroup members expressed the point of view that service providers need to be able to provide better cost estimates for remediation work. Remediation is not the core business of many site owners, whose income is typically generated elsewhere. More generally service providers should be more attuned to the financial risks of remediation projects, and perhaps take some financial responsibility for the work they carry out. The Internet auction case study reported at the meeting, for risk assessment and remediation services, indicated how commercial managers in some companies see contaminated land management services as a commodity services, or at least as a service for which competitive forces can drive down prices. Together, a drive for better cost estimating and accepting financial liabilities for services, and a desire to force greater competition, could put service providers under some pressure to change.

Some service providers at the meeting felt that innovative approaches to financial risk transfer mechanisms, such as insurances, standardising service packages and market consolidation would provide the necessary adaptation. Others felt while that a drive to “commodity” services for land remediation might seem attractive to commercial managers with limited knowledge of land contamination problems, ultimately this was a short term and ineffectual step for the following reasons. Firstly, contaminated sites tend to be unique in one or more important regards. Secondly, land remediation services are already a highly competitive and low margin market. Reducing margins further would simply drive out the more able professionals. “Dumbing down” of the service provided might mean that problems could be overlooked or inadequately addressed, or that opportunities might be missed. One can draw a comparison with the costs of accountancy and legal services, which are typically, hour for hour much greater, yet the liabilities of an incorrectly managed contaminated land problem could be huge.

The impact of the “Internet auction”, reviewed in this report, on the quality of service the company is receiving is still being assessed. Given the breadth of views, it will be interesting to see how this experiment turns out. It is also worth noting that however services are retained, and financial risks transferred, the quality of information available to decision making is only as good as the quality of the information resulting from the site investigation work, as pointed out in the last NICOLE workshop in Pisa.

Not all industry delegates had the same confidence in risk transfer mechanisms as a means of controlling future liabilities, with delegates from several countries (Norway, the Netherlands and Germany) expressing scepticism. Some questioned whether such mechanisms would work if the original site owner became bankrupt. However, risk transfer mechanisms can be arranged so that cover is still provided for future site owners in this circumstance. Others felt that the regulator would always be able to “go back” to the original owner, who would then not be compensated by a third party holding an insurance. For example, the regulator would go to the original owner because following the chain of transactions to the current owner would be too time consuming. They would assume that the original owner would then take civil action to recover his losses. Two possible solutions to this problem were suggested, the first being that the Environmental Impairment Liability policy should be joint, including the original owner. The second possibility is that money should be

set aside in an escrow account to deal with possible future liabilities. A major disadvantage of such accounts is that the ability to put this capital to work in an organisation's general business is then lost.

In terms of dealing with liabilities, and investing in sites, a possible categorisation for brownfield sites is into two classes:

- those with NPV more than zero (after redevelopment), and
- those with NPV of zero or less.

Much of the discussion about brownfields redevelopment at this meeting discussed managing sites with NPV more than zero, although it was pointed out that it is possible to divest of sites with NPV less than zero in a transaction for a portfolio of sites. However, there are many sites in CEE with NPV less than zero. In some countries (for example the UK and the Netherlands) there are policies in place or have been policies in place to provide funding to regenerate areas with such sites for social and political reasons. However, EU competition policy has greatly limited what can be offered by way of redevelopment incentives for such areas.

In CEE countries land values are generally depressed, although increasing around major conurbations like Warsaw, Prague, Bratislava and Budapest. From an investors point of view this can make greenfield sites more attractive, as long as ownership can be clearly established, as the differential between green and brownfield land costs is not great. Equally, from an investors point of view it is often more convenient to build from new rather than refurbish existing buildings.

The contaminated land inventories (or other land use inventories) existing in many Member States of the EU do not yet exist in CEE. Indeed, many areas in CEE lack property or land registers of any kind. Furthermore, many industries do not yet carry out regular environmental / emissions monitoring. This means that the extent of land contamination in CEE, and its potential for change, can only be guessed at. Contaminated land inventories are perhaps 5 to 10 years away from existence in CEE countries. Many CEE countries are heavily reliant on groundwater resources such as the Carpatian Basin, which are under severe threat (or in some cases already seriously affected) by industrial and agricultural emissions. Furthermore, many areas of the CEE' have an extensive aquatic transborder network of rivers and lakes. The Water Framework Directive implies extensive industrial site decontamination works to stop secondary contamination of surface waters. While CEE Accession States have been aware of EU policy in groundwater for many years, there has been as yet little development of water policy, and a step change in policy will therefore have to take place.

Use of risk based decision making is rare in CEE, although there are now many service providers with appropriate expertise. This is felt in part to be due to a lack of awareness in the regulatory sector, especially at a local level, and a desire of those in charge of developing regulations to keep decision making processes as simple as possible: i.e. comparison of a concentration with a number (limit value). Such decision making can also work to the commercial advantage of developers who can more clearly show compliance (when this is actually achieved).

Annex 1 List of Participants

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56.	Leo Korving	Royal Haskoning	NL
57.	Laszlo Kovacs	Duna Television Co.	Hungary
58.	Dick Kruisweg	Akzo Nobel NV	NL
59.	Maria Kuyukina	Inst. of Ecology & Genetics of Microorg.	Russia
60.	Jenna Lines	Powergen	UK
61.	Richard Lock	Clifford Chance Pünder Sp.K.	Hungary
62.	Owen Lomas	Allen & Overy	UK
63.	Tuula Lukander	Niton Europe GmbH	Germany
64.	Tamas Madaracz	University of Miskolc	Hungary
65.	Balasz Magyar	Envitest Ltd.	Hungary
66.	Thomas Mezger	Akzo Nobel NV	NL
67.	Emiliano Micalizio	ERG Petroli SpA	Italy
68.	Kate Millar	University of Nottingham	UK
69.	Walter Mirabella	EFOA	Italy
70.	Margaréta Mojziso	Slovak Environmental Agency	Slovakia
71.	Chris Moore	WS Atkins Polska	Poland
72.	Allen Murray	Komex Clarke Bond Ltd.	UK
73.	Zoltan Nasasdy	Clifford Chance Pünder Sp.K.	Hungary
74.	Thomas Nash	Cherokee International Services Ltd.	UK
75.	Robert Nemeskeri	Regional Environmental Center for CEE	Hungary
76.	Alain Perez	Totalfinaelf	France
77.	Jessika Petrén	Stena Metall	Sweden
78.	Carol Pettit	BNFL	UK
79.	Jim Philp	Napier University	UK
80.	Kelvin Potter	ICI Regional & Industrial Business	UK
81.	Gerrit Schalkwijk	Texaco Nederland BV	NL
82.	Lida Schelwald	NICOLE-ISG Secretariat	NL
83.	Nick Spijkers	Fugro Milieu Consult	NL
84.	Piotr Syrczynski	Atkins Environment Poland	Poland
85.	Waleria Skarzynska	Clifford Chance Pünder Sp.K.	Poland
86.	Steve Smith	Welsh Development Agency	UK
87.	Edward Someus	Terra Humana Clean Technology Eng.	Hungary
88.	Sven Starckx	KPMG	Belgium
89.	Jonathan Steeds	WS Atkins Consultants	UK
90.	Matthias Sumann	Tauw BV	NL
91.	Mike Summersgill	VHE Technology	UK
92.	Eva Szerencses	Golder Associates (Hungary) kft	Hungary
93.	Ibolya Teschner	Kuiper & Burger Environmental Cons.	NL
94.	Johan van Veen	NICOLE Secretariat	NL
95.	Elze-Lia Visser	NICOLE SPG Secretariat	NL
96.	Sjacco de Vos	Royal Haskoning	Hungary
97.	Elek Votin	KPMG	Hungary
98.	Terry Walden	BP International	UK
99.	Steve Wallace	Secondsite Property	UK
100.	Bart-Jan Wilton	URS Netherlands BV	NL
101.	Carolann Wolfgang	TNO	NL
102.	Michael Wright	MWH	UK
103.	Jan van Wijngaarden	Ministry of Environment	NL
104.	Luciano Zaninetta	Enichem	Italy