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Requirements to facilitate the transfer of technologies for the treatment of the Industrial and Mining Waste

Given the fact that Romania from ancient times but notably during the past 60 years developed into the most significant mining nation in Europe, provides us here today with a challenging task. We are here to improve our understanding how we all can contribute to an efficient and successful decommissioning of the mining waste deposits. We are also here to take benefit from the fact that the European Commission is proactive in facilitating the economic, technical and administrative conditions for implementation in true cooperation with Romania. Further, the solution should result in a complete reversal of the environmental side effects that have contaminated the environment and remains a hazard until taken care of. Not only is this challenge of significance for the future possibilities of revival and restart of industrially safe processes and perhaps also mining operations again. It may also bring back job opportunities and competitiveness for the export challenges ahead. At stake is also the fact that solving this daunting task can develop a domestic knowhow and expertise that can very well be attractive competence and capacity for export and missions around the world in those areas where similar problems still reside.

In this presentation, we like to highlight some important aspects and parameters that will determine the speed of implementation and help identify proactive measures to be planned and regulated in parallel to the work schedule of decommissioning. Such proactive attitude and forthcoming behavior will establish the attractiveness factor in order to mobilize the attention of competent implementers. In order to structure and prioritize the decommissioning activities and implement preventive measures for disruption of continued effects of the environment from old mining outputs, we need to highlight early in the venture process the conditions and aspects that are applicable to Romanian law and regulations.

A good source of information indicating the spectrum of these legal conditions and aspects is the classification scheme of mining waste facilities in Romania, elaborated and published 2007 under the project title Safe Management of Mining Waste and Waste Facilities. The classification scheme was intended to support risk assessment from a combination of variables creating 16 categories demonstrating from the worst case to the least hazardous.

Our challenge is to comprehend how we can reflect this rating of risks with combination of solutions that can reduce and finally eliminate the problems associated with the waste deposits and their impact on the environment, nature and life of all kinds. The approach to this understanding is very essential in order to structure the principle tackling of selection of methods to be utilized for the purposes of reducing and eliminating the direct and associated problems here addressed. The complexity is relevant for the understanding of in what order certain activities are implemented to address priority issues at priority sites. The “maps” of knowledge need to be verified, revised and – in case of existing white spots on the maps – be developed into relevant information packed spots.

The first action is to stop the continuation of the distribution of contaminated water that affects the ground water and which is unrestricted in its continued distribution to nearby ponds, rivers etc. A concrete countermeasure is to take charge over these flows with physical direction and collection of these flows in order to process the contaminated liquid to high quality clean water suitable for reintroduction into nature. This will require good quality understanding of the patterns of these water distribution flows, their volumes and seasonal variations. It will require also a clear understanding and identification of the impact these flows have today on essential human living quarters and areas from which current drinking water is collected. The situation also immediately addresses the necessity to ensure quality cleaning processes for drinking water purposes and review of the current methods in use today.

The dismantling of the physical waste mountains requires updated knowledge of their content. While historical records may serve initial purposes of identification, site test are most likely necessary in order to

verify consistence and analyze content. Improved knowledge will help determining the decommissioning technique to be utilized, and identify the residual values to be extracted and collected. The environmental benefits reside in the knowledge base for undertaking a priority rating for the jeopardy factor involved, and will need to be harmonized with the communities and political decisions.

Technology-wise, there is today state-of-the-art solutions that can bring the volumes of the so processed waste turned into re-usable components and final waste of modest volumes that is harmless to the environment. The key is to stop the actives from conserving the hazardous situation, and to turn the landscape into similar shape as it was before the area was industrialized. Thus, repatriation of land use can be manageable, and spark incentives to the local community engagement. The reclamation of previously useless land areas will be one of the great and priceless benefits for the country of Romania, its population and encourage alternative economic activities.

Land issues will ignite new investment incentives. Geophysical mapping and analysis will continue to be a good instrument for determining the suitability of the land for various purposes. Such perspectives can also have positive and interesting effects on wildlife and the nature. Legal aspects of this process will need to be monitored and managed. The bankability of such opportunities will rest heavily on the proper and proactive clearance of previously contaminated land, and the acceptance by the investment community and the general public.

Access to cost efficient energy supply, distribution and its infrastructure will be imperative to the acceleration of the decommissioning process for Romania. Interestingly, innovative applications of hydro power generation can be applied to those areas where rivers with significant water flow. This way, remote areas with old or irrelevant distribution of electric power could benefit from green field electricity supply. This can be managed utilizing the power for night processing of the waste, while day production of electricity can benefit household and industry market segments. Thus, the added power supply systems will enable incentivized tariff reductions on regular electricity supply and help control the cost factors related to the supply side. After the project as a local remediation is completed, the installed power generation systems will continue provide benefits to the local community and their potential.

Managing a complex decommissioning task like this, over a period of some 15-20 years, will be facilitated by the creation of a special purpose company (SPC). Such a company will help contributive partners to relate to the main task and inter-relate for cooperation. The State of Romania should have an active but minority role in such an implementation company. Nevertheless, the State's role will be twofold. First, to provide administrative legitimization of the operator company as subject to receiving the contribution regarded as grants from the European Commission system. Second, the State will ensure that all relevant regulations, procedures and permits etc are produced in a timely manner and without delaying interference. The State will interact in a forthcoming way with the local communities. This will facilitate speedy implementation and avoidance of delays. The SPC will be the consolidating point for all monetary flows, maintenance and enabling of control of standards in the field. Existing institutions and information "banks" will become natural providers of useful information, while the consolidation of operational facts and figures will be done by the SPC.

The Special Purpose Company SPC will be the host organization of a new generation land surveyors, environmental experts, water control and production personnel, experts in domestic regulations, permission procedures, quality control and verification of decommissioning process. All these competences will form a recruitment basis for international expertise in the field, and to become much in demand. The whole "case of Romania" will serve as a pilot school, and establish new standards for processing of decommissioning projects. This pilot case will prove to become the international bench mark for similar challenges. The demonstration effect will strengthen institutional efforts via World Bank, United Nations, European Commission and others to accelerate decommissioning projects in other geographies. The approach will make visible not only the cost side of the coin but also the benefit side of the coin. And, now, Romania can assume the edge of that particular coin and extend the leverage effect!