A Model For The Efficient Delivery Of Waste Management Services

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EXECUTIVE SUMMARY

The increasing adoption of public-private partnerships (PPPs) in municipal waste management is a world-wide trend. Separating the client- and operator- relationship inherent in public service delivery, that service is then exposed to competitive tendering to extract through competition and market testing, the maximum efficiencies in service delivery with the least impact on the public purse. The contractor offers financing, technological innovation, project management expertise and operational efficiency, while performance is monitored through formal contractual arrangements. PPPs have proved to be effective and highly efficient in delivering waste management services in countries where this model has been implemented. The phenomenal incremental addition of public service infrastructure – power, water, waste – within a short space of time in the central and eastern European countries and in the Gulf economies is testimony to their success.

A variant of public-private partnering is the approach taken in the UK where competitively tendered integrated contracts have been awarded under the Private Finance Initiative (PFI). Through an illustrative case study it is shown that wider value chain enhancements can be obtained by combining diverse elements of the waste management chain into an integrated contract. Environmental criteria built into the competitive tendering process ensure broader life-cycle considerations are taken into account when designing a total waste management solution, and that the service selected delivers the greatest environmental benefits commensurate with operational security and affordability. Pre-station contracts allow the phasing-in of capital-intensive infrastructure based on sound economic and environmental principles. The social responsibilities of the contractor are served through appropriate transfer arrangements that preserve the integrity of public sector workers’ protection rights.

INTRODUCTION

While responsibility for the provision of municipal waste management services invariably rests with local or regional governments, the mode of delivery varies across Europe. Approaches range from the delivery with public funds channelled through public bodies, to partnership models involving the private sector to a greater or lesser degree. Increasingly, however, historical constraints applied in some Member States to retain particular service options and waste flows within the public sector have been subjected to legal challenge.

This paper commences with a brief commentary on the role of the private sector in waste management, followed by a summary of some of the delivery models in Europe. A variant, the Private Finance Initiative approach of the UK is treated in greater detail, with a case study
illustrating how this approach (competitive tendering coupled with integrated contracts) can also optimise environmental outcomes at the most advantageous cost to the public purse.

**PUBLIC-PRIVATE PARTNERSHIPS (PPPs) IN MUNICIPAL WASTE MANAGEMENT**

The key principle of PPPs in municipal waste management is the realisation of potential efficiency savings to the public purse by exposing that service to competitive tendering. Through formal contractual arrangements municipalities monitor the contractor’s performance, while the contractor offers financing, technical innovation, project management expertise and operational efficiency.

Notwithstanding these potential benefits, there is little doubt that ideological preferences influence the degree to which the private sector is permitted to compete in what was traditionally the domain of public bodies. Whereas one side uses the language of liberalisation, service efficiency and cost-effectiveness (Savas, 1987; Adam Smith Institute, 2002; Coad, 2005) the other side uses the language of exploitation, rigged markets and erosion of the public service ethic (Walsh, 1995; Hall *et al.*, 2003; Centre for Public Services, 2004; Hall, 2006). With the proviso that genuine competition must exist between qualified service providers (Coad, 2005) it is difficult to sustain the argument that delivery of municipal waste management services should remain the exclusive or preferential right of a public body. White (1978) notes that municipal waste management services cannot be considered a public good since it neither exhibits “non-rivalness” in consumption (in that pricing is necessary to define the level of each individual service) nor high exclusion costs; therefore according to economic theory there is no *a priori* presumption against market provision.

There is an extensive worldwide literature spanning a number of decades on the impacts of competitive tendering, particularly in waste collection (for example, Szymanski and Wilkins, 1992; Szymanski, 1996; Cointreau-Levine, 2000; Gomez-Lobo *et al.*, 2001; Coad, 2005; Humphries, 2007), consistently showing a fall in net expenditure of between 10-20% with little evidence to suggest that lower costs were a consequence of lower service standards or reduced rights for workers. In Sweden Ohlsson (2003) found that public production costs were 6% lower than private service costs, albeit for different technological service offers. However, Savas (1979) claims that it is difficult for municipalities to obtain accurate estimates of the true cost of a public service, and that it can often be underestimated. Cointreau-Levine (2000) points to hidden costs or costs shared across other public service sectors such as depreciation of shared assets, debt servicing and administrative overheads that may not be fully isolated when costing waste management services. Competitively tendered partnership arrangements are equally common in municipal waste treatment and disposal. The European Bank of Reconstruction and Development (EBRD, 1997) sees private sector involvement as key to “its commitment to support decentralised and efficient municipal services” in the accession Member States (LOGON Studies, 2004).

**MUNICIPAL WASTE MANAGEMENT DELIVERY MODELS IN EUROPE**

Table 1 provides estimates of the public/private split in municipal waste collection and treatment markets in selected European countries (Hall *et al.*, 2003). In aggregate, some 80% of the treatment market and 35% of the collection market is located within the private sector in these countries (Hall *et al.*, 2003). Some of the different delivery models are described below.

In France municipalities have the choice of either managing their waste services themselves or contracting public, private or mixed public-private companies (called *Société d’économie mixte* or *SEM*). Waste services can be managed by the municipality’s own services without being segregated from the municipal general budget (called *régie simple* or *régie directe*). Alternatively, waste services can be managed by a municipal entity, with separate accounts (called *régie autonome*).
Two main types of contracts exist, both following competitive tendering procedures, if the municipality entrusts waste services to a third party:

1. The public market contract (i.e. procurement of a product or a service) under tendering procedures described in the Code of Public Markets (Code des marchés publics), which transcribed into French law EC directives 1992/50/EC and 1993/36/EC.

2. The delegated management contract (Délégation de service public or DSP), a procurement method by which a public entity which holds the responsibility of a public service contractually delegates the operation of this public service to a public or private entity (called the délégataire), the remuneration of the latter being substantially correlated to the performance of the service (the délégataire bears a commercial risk). The délégataire may construct new works or may have to acquire assets necessary to the delivery of the service. DSP competitive procurement procedures follow the Sapin Law of 1993.

In 2004 the French government introduced the contrat de partenariat (dubbed the “French PPP”), a complex form of public market contract. Within the scope of provision of the service, municipalities can direct waste to particular facilities. It is generally perceived that the Code des marchés publics has become so complex that it is difficult for municipalities to organise fully compliant tendering procedures, with claims on a regular basis cancelling tenders for legal flaws.

In Germany the 1994 Act for Promoting Closed Substance Cycle Waste Management – the Waste Avoidance, Recovery and Disposal Act – requires all recyclable and non-recyclable household waste (other than package material belonging to the DSD green dot system), as well as commercial/industrial non-recyclable waste, to come under the control and direction of regional authorities. The latter do not have this power over recyclable commercial/industrial waste.

In 2003 the European Commission (EC) took Germany to the European Court of Justice over waste procurement in the “City of Halle” case (C-84/03). The ECJ ruled that German regional authorities may not direct waste to plants held in public/private partnerships even if it owned the majority share. The EC has pursued other alleged infringements concerning award of service contracts and concessions without competition (for example, the cases of Bockhorn, Braunschweig and Cologne).

Crucially, the “City of Halle” judgement affirmed the right of public authorities to provide public services using their in-house resources without applying EU public procurement law – i.e. self-awarding the service without a call for tender. However, this may only apply in cases where the contracting entity is legally indistinguishable from the contracting authority; if not, a call for tender is mandatory. The German model enables public authorities to retain the power of direction over key waste flows. A further restriction of the market is seen where cooperation between public

<table>
<thead>
<tr>
<th>Country</th>
<th>Collection</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>100</td>
<td>5</td>
</tr>
<tr>
<td>France</td>
<td>49</td>
<td>70</td>
</tr>
<tr>
<td>Germany (including DSD)</td>
<td>60</td>
<td>88</td>
</tr>
<tr>
<td>Italy</td>
<td>40</td>
<td>28</td>
</tr>
<tr>
<td>Netherlands</td>
<td>28</td>
<td>38</td>
</tr>
<tr>
<td>Spain</td>
<td>75</td>
<td>90</td>
</tr>
<tr>
<td>Sweden</td>
<td>42</td>
<td>7</td>
</tr>
<tr>
<td>UK</td>
<td>48</td>
<td>82</td>
</tr>
</tbody>
</table>
bodies has been formalised by creating public associations, with transactions among the members being treated as in-house transactions outwith EU procurement laws if the waste services are merged into one shared organisation (called Zweckverbände). Within these entities, municipalities owning treatment plants have assigned waste flows (without competition) from the other public members of the association. For example Eco-City, an association of several cities located at the Ruhr-Area, has ensured full capacity of a few publicly-owned incinerators by assigning all waste flows of the member cities without calls for tender.

Despite these efforts to protect in-house public businesses, Gaube and Weigand (2005) have forecast a diminishing trend in public ownership of facilities and have modelled short-, medium- and long-term “deregulation” scenarios in which competition for waste inputs is enhanced firstly by opening hitherto closed markets to public tender, and secondly by relaxing the proximity principle prohibiting cross-länder movement of waste destined for disposal. The results indicate a 25% fall in the average disposal fee. Such a fall was inevitably accompanied by closure of inefficient plants reliant on high fees, but overall the infrastructure was forecast to be in better balance with demand.

In the Netherlands, a Dutch decree regarding tendering procedures for public assignments (Besluit aanbestedingsregels voor overheidsopdrachten, in force since 2003) applies the EU procurement Directive 2004/18/EC to the outsourcing of waste services above an economic threshold value of €211,000. In the municipal waste collection market approximately 40% of the municipalities, especially the larger cities, have their own waste collection company, 20% of the market is in the hands of collaborating semi-governmental organisations and the 40% is privately contracted. Only a few PPPs can be found in the waste collection business. The “City of Halle” judgement and other similar cases has been interpreted very strictly in the Netherlands by the Ministry of the Interior and by the municipalities, requiring a fully transparent process in line with the European tendering rules. This has made that the procedure to set up a PPP protracted and costly. In practise, tendering often is preferred even if a PPP potentially offers the best mix of public and private strengths.

A compensation fund created in 2005 has addressed the issue of the difference in VAT between public and private companies, though this particular public-private fair competition debate has not been entirely resolved. Private sector companies have objected to the European Commission that an unfair competitive advantage to public companies can pertain due to high internal tariffs for the closed municipal market of the public company and low cross-subsidised tariffs for commercial activities outside the municipal market. Householders thus pay indirectly for potentially risky commercial ventures of their public waste service company. For a level playing field to operate, public companies wanting to have commercial activities should be required to open their municipal market to competitive tendering.

In the United Kingdom compulsory competitive tendering (CCT) of refuse collection was introduced by the Local Government Act 1988, solidifying a voluntary trend along local authorities to outsource waste management services. Local authorities wishing to continue to offer an in-house service are obliged to ring-fence the operation (called a Direct Service Organisation, DSO) and build in a minimum commercial rate of return on assets (5%) to ensure fair competition against private sector service providers. The Environmental Protection Act 1990 expanded competition to include disposal services. Local Authorities wishing to continue to own and operate treatment and disposal facilities were required to set up arms-length entities called Local Authority Waste Disposal Companies (LAWDCs). As with waste collection, LAWDCs must operate commercially, with a minimum positive return on employed assets. Local authorities have no power of direction over waste flows delivered by collection authorities, but must compete alongside the private sector.

In 2000 CCT was replaced by Best Value, which required local authorities to evaluate competitively tendered contracts on a balance of both price and quality to ensure “value for money”
– which can mean the lowest price, provided the contractor delivers quality and performance, and preferably also “added” value.

The Office of Fair Trading (OFT) conducted two major studies into the public procurement of waste management services, focusing on competition issues (OFT, 2004; 2006). The 2004 report raised concerns that local authorities might be favouring bids from their in-house DSOs during the tender process, putting off private sector companies from bidding. Conversely, the report also warned of diminishing competition following restructuring and consolidation of the industry, leading to vulnerability to collusion amongst suppliers. The 2006 report recommended that when in-house providers were also tendering, local authorities should take care to ensure competition on a level playing field so that private suppliers are not discouraged from bidding. The risk of regional monopolies and of collusion could be addressed by tendering separately for waste treatment contracts and landfill contracts, and by finding mechanisms to increase the number of bids.

THE UK INTEGRATED PFI MODEL

The UK has historically relied on landfilling of municipal waste as the disposal method of choice. Upgrading the national waste management infrastructure became especially urgent when national recycling targets and landfill diversion targets for biodegradable municipal waste were introduced, the latter through the Landfill Directive 1999/31/EC. Faced with a very significant capital investment in new treatment facilities (estimated at €1.5 billion per year over 10 years) and the threat of infraction for non-compliance with Directive 1999/31/EC, one of the funding mechanisms the government has offered to local authorities is the Private Finance Initiative (PFI), through which private finance may be made available to purchase capital-intensive services from the private sector. Since the first waste PFI deal was signed in 1997/98 a total of fifteen projects are in implementation, representing €1.3 billion of capital investment with a total contract value of €10.5 billion. By mid-2007 a further 12 local authorities were in various stages of waste PFI procurement.

PFI involves the private sector in the provision of public services through competitive tender, in the main by financing and constructing capital assets and providing services relating to these assets – the DBFO route. Central government provides a contribution towards the annual costs (PFI credits) reflecting some of the savings it sees in not having to borrow the funds. The construction costs are typically financed using project finance provided on a non-recourse basis to a special purpose vehicle (SPV) established specifically for the project. The public sector defines the required level of output service delivered in return for an annual revenue payment to the private sector partner. The charge covers a payment for the provision of that service, facilities management and maintenance over the period of the contract (typically 25-30 years). Subject to the terms of the contract the asset either remains with the private partner or is returned to the public authority.

A hallmark of the waste PFI model to date has been the integrated format of the service provision, covering at its most complete, the entire waste management life cycle (see Figure 1). Variants include local authorities letting separate contracts for waste collection, landfilling, and/or energy recovery, interfacing with the main PFI contract.

Approaching a waste management contract in this manner has a number of advantages:

(1) Tenderers are required to meet overall environmental performance targets (landfill diversion targets, minimum recycling rate, etc) and are generally free to offer technologies of their choice. The local authority can therefore select from a far wider range of technological (and often innovative) options, and can optimise the combination of processes commensurate with affordability. The system is designed in its entirety, rather than piecemeal.
(2) Because waste flows have to be considered across the entire waste management system rather than just from facility A to facility B, wider value chain enhancements can be obtained by integrating diverse elements of the system, for example by avoiding duplication of treatment capacity. By extension, global costs are also minimised.

(3) Capital-intensive infrastructure can be phased in over the lifetime of the contract. Since most PFI contracts involve adoption of existing infrastructure (often the local authority’s LAWDC) initial capital outlay is typically on upgrading front-end facilities such as civic amenity “bring” sites and sorting centres. As the basic infrastructure begins to deliver materials of the desired quality, more capital-intensive downstream treatment facilities are phased in. Clearly these facilities have to operate for a reasonable period of time over the lifetime of the contract in order to recover the investment through an affordable gate fee paid by the local authority.

Risk transfer is a key issue within the PFI rules. The contract structure test requires that the majority of the risks are borne by the contractor, and that payments made to the contractor are related not just to the delivery of the service but also its quality. Waste projects tend to have higher risks across their lifespan than is the case with “conventional” projects such as schools and prisons, leading to high bid costs, higher transaction and contract costs for local authorities, and lengthy tender procedures. The government also perceives that the waste management industry will not have the investment capacity to cope with the anticipated volume of PFI deal flows over the coming years.

The government is encouraging local authorities to rebalance the allocation of risk to reflect the realities of project implementation, and also to disaggregate what were previously single integrated contracts in order to admit a wider range of financing options and to attract a larger pool of bidders. There are, of course, other options available to local authorities wishing to fund capital-intensive infrastructure – for example prudential borrowing, co-funding with the private sector, and partnership arrangements. At face value some of these options (including unbundling of integrated contracts) might seem less costly and more flexible than an integrated PFI but the scale of investment with, say, prudential borrowing is relatively limited, due diligence and other formalities for those elements of the contract would fall to the local authority and increase its transaction costs, and all (or the larger proportion) of the risk would reside with the local authority rather than with the contractor. Furthermore, coordination of overall performance across a number of interlinked contract interfaces would present very real challenges and significant costs. Nevertheless some of these alternatives might well suit a more localised and less capital-intensive infrastructure profile.

**CASE STUDY: CORNWALL WASTE PFI**

Cornwall County is a predominantly rural county with a population approaching 500,000. The County currently landfills around 71% and recycles/composts 28% of its municipal waste. National
and EU targets required Cornwall to reduce its dependency on landfill and to recycle more of its waste. The authority determined the probable type and nature of waste management services and infrastructure required, and concluded that future service provision would be considerably more varied and complex to arrange and require substantial capital investment compared to the current largely landfill based operation.

In Cornwall’s Outline Business Case, sole in-house provision or joint venture with a private sector partner were not considered value for money options once issues surrounding experience and expertise in service delivery and risk transfer were taken into account. This conclusion was tied in with funding issues - Cornwall was not in a position to fund the substantial capital sums through in-house sources and so would have to look to the private sector. A disaggregated contract approach was discounted; the authority would have had to maintain a substantial in-house team to manage and operate the full range of service contracts and the interface risks that follow. Even excluding the major capital associated with residual waste treatment, the investment required in the remaining services was substantial. The integrated model allowed a more clear-cut defining of the role of the public and private sector and the attendant risk profile.

Once it was determined that Cornwall could/should not directly fund the capital sums this led to the decision on a PPP approach. However, there was a front-end affordability issue (a gap of about 15% of annual budget) when Cornwall’s five-year forward budget (based on existing service provision) was compared to the new service provision under a PPP structure. Cornwall’s options were to:

- reduce the scope of new services (not practical as targets had to be met);
- cut back on other local authority service budgets (politically difficult/unacceptable);
- consider making up the shortfall by applying for central government support through the PFI.

The last option was chosen by Cornwall County as its preferred funding mechanism, i.e. applying for PFI credits. Cornwall compared the costs of running a fully integrated service against the cost of the PPP option, and determined a direct cost saving of about 10% over the life of the project in favour of the PPP/PFI route (the analysis did not cost the risks that would be retained by the authority under the in-house provision model). The size of the PFI credit support awarded to Cornwall by central government (£60m) reflected the affordability shortfall to be accommodated.

The procurement process (under the negotiated procedure) commenced in 2003, with an invitation to bidders based on an output specification, culminating in SITA UK commencing the 30-year contract on 1 December 2006. Table 2 lists the key waste flow targets placed on the contractor, while Table 3 summarises the key allocations of contractual risk.

Table 2  Key waste flows and performance targets for the Cornwall waste PFI contract

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2012</th>
<th>2036</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tonnes in</td>
<td>340,000</td>
<td>370,000</td>
<td>460,000</td>
</tr>
<tr>
<td>Tonnes to EFW plant</td>
<td>0</td>
<td>240,000</td>
<td>240,000</td>
</tr>
<tr>
<td>Tonnes to landfill</td>
<td>240,000 (71%)</td>
<td>40,000 (11%)</td>
<td>100,000 (22%)</td>
</tr>
<tr>
<td>Tonnes to HWRCs</td>
<td>70,000</td>
<td>80,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Percentage recycle from HWRCs</td>
<td>40% to March 2007</td>
<td>50%</td>
<td>50%</td>
</tr>
</tbody>
</table>

In future approximately 20% of Cornwall’s waste will go to landfill. Under the terms of the contract the Contractor must recycle all separated waste collected by the district councils. The Contractor will also be penalised for achieving less than 50% recycling across all of the Household Waste Recycling Centres (HWRCs).
<table>
<thead>
<tr>
<th>Factor</th>
<th>Responsibility</th>
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</thead>
<tbody>
<tr>
<td>Planning permission (non-EfW)</td>
<td>Employer for facilities post-financial close</td>
</tr>
<tr>
<td>Planning permission (EfW)</td>
<td>Contractor uses “all reasonable endeavours”. Long Stop Date mechanism beyond which planning becomes an Employer risk</td>
</tr>
<tr>
<td>Municipal Waste input</td>
<td>Volume and mix – Employer/Contractor shared</td>
</tr>
<tr>
<td>Third party waste input</td>
<td>Contractor</td>
</tr>
<tr>
<td>Capex</td>
<td>EfW indexation formula between closing and notice to proceed</td>
</tr>
<tr>
<td>Opex</td>
<td>Basket of indices for an annual price review</td>
</tr>
<tr>
<td>Landfill costs</td>
<td>Contractor</td>
</tr>
<tr>
<td>Landfill tax and landfill penalties</td>
<td>Employer risk with a general total cap on all deductions if O&amp;M does not achieve landfill diversion targets</td>
</tr>
<tr>
<td>Interest and exchange rate</td>
<td>Before closing – Employer risk. After closing – Contractor risk</td>
</tr>
<tr>
<td>Payment mechanism</td>
<td>Employer/Contractor shared – payment linked to performance</td>
</tr>
<tr>
<td>Revenues from power/recyclables</td>
<td>Contractor</td>
</tr>
<tr>
<td>Changes in law</td>
<td>General change in law – Employer risk after 3 years.</td>
</tr>
<tr>
<td></td>
<td>Discriminatory change in law – Employer risk</td>
</tr>
<tr>
<td></td>
<td>Specific change in law (waste) – Employer risk</td>
</tr>
</tbody>
</table>

Along with the significant shift towards increased recycling and reduced landfilling, the 30-year contract brings a range of benefits:

- A total phased investment of €240m in new and upgraded facilities, with an initial investment of €20m in the first year of the contract to upgrade recycling facilities. The integrated contract will include 7 redeveloped facilities to optimise recycling, 6 new HWRCs, 6 transfer stations, 5 composting facilities and an Energy from Waste (EfW) facility.

- High degree of price certainty for the duration of the contract term, avoidance of fines for infraction of the landfill diversion targets, and avoidance of escalating landfill tax were waste to continue to be sent to landfill.

- Potential for significant income from electricity and heat generation from the EfW facility. This will help deliver a more stable electricity supply within Cornwall.

- Job security for workers. As part of the new contract, most employees of the LAWDC and related companies transferred to SITA UK (over 200 employees). Their existing terms and conditions are protected, and for some low paid employees these will be enhanced, giving them better pensions and more holiday as well as a higher rate of pay. Overall a net increase of 54 jobs is anticipated when all the facilities are operating.

- Reduced climate change emissions – the new approach to waste disposal will result in a reduction of more than 80,000 tonnes of CO$_2$ equivalents each year – and an improved capacity for dealing with the increasing levels of re-usable and recyclable goods and materials.

In terms of the wider value chain benefits to the County, the contract includes the ability for the contractor to process third party commercial/industrial waste at certain sites, with potential financial benefits to the County through a unique excess profit sharing mechanism encompassing all revenue streams. Facilities are sized accordingly, removing the need to duplicate treatment capacity.

The Cornwall waste PFI was the first waste PFI project compliant with the Government’s revised rules (Defra, 2006) to close on a non-recourse project finance basis, and was one of the two PFI
waste projects used as a model “pathfinder” project; the other being the Nottingham waste PFI – a corporately financed solution. Cornwall was also the first UK waste PFI to include senior debt financing from the European Investment Bank.

CONCLUSIONS

The increasing adoption of public-private partnerships in municipal waste management is a worldwide trend, the objective being to extract the maximum efficiencies in service delivery with the least impact on the public purse. This objective is often hindered in the EU with municipalities either taking up monopolistic positions or imposing restrictions that exclude the private sector from participating in certain markets. These closed institutional structures have been maintained by practices that are increasingly being challenged – for example, self-awarding or preferentially placing service contracts, or directing waste streams to particular facilities, all without recourse to competitive tender. Evidence gained from international experience points to lower costs for an equivalent level of service quality following the lifting of market restrictions and introduction of competitive tendering. In Member States such as the UK compulsory competitive tendering has been in place for nearly two decades, separating the client- and operator- relationship inherent in procurement and delivery of a service, and thereafter inviting competitive tenders to encourage much-needed capital investment in upgraded infrastructure and to maximise service efficiency from both an economic and environmental standpoint.

In this context PFI contracts in the UK, as well as "contrats de partenariat" in France are local variants of international, widespread and successful DBFO/BOOT delivery models. Within the PPP model the concept of integrated contracts offers further enhancements in service provision by incorporating broader life-cycle considerations into the design of a total waste management solution, allowing for operational security and affordability. Expenditure on capital-intensive infrastructure can be phased on the basis of sound economic and environmental principles. The employment rights of public sector workers are respected and preserved through appropriate transfer arrangements with the private sector contractor.

ACKNOWLEDGEMENTS

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REFERENCES


