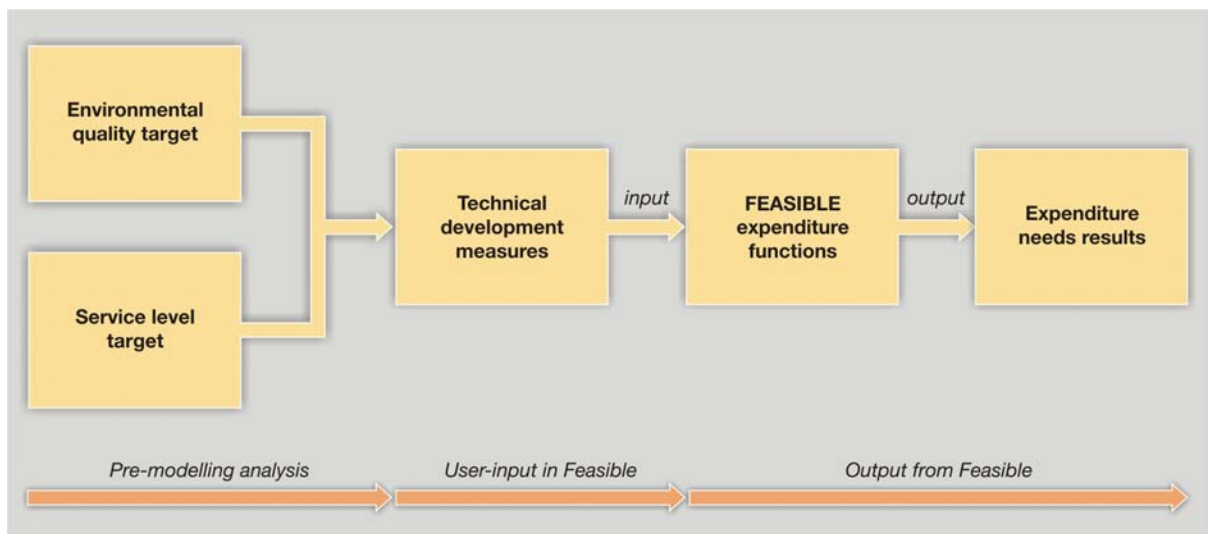


ANNEX VII. FINANCING STRATEGY CONCEPT AND METHODOLOGY

The computerised decision support tool FEASIBLE, which abbreviates Financing for Environmental, Affordable and Strategic Investments that Bring on Large-scale Expenditure, was designed to facilitate the development of a financing strategy.

The FEASIBLE model can assist in the preparation of the financing strategies through providing an aggregate picture of the finance needs associated with certain targets. FEASIBLE can also facilitate the iterative process of balancing the financing needs related to certain environmental and service targets with the available finance. Being a computerised model, FEASIBLE may be used to analyse the consequences of changing a certain policy in a systematic and transparent manner.

As can be seen in the figure below, in FEASIBLE, targets and objectives are not entered directly but expressed in terms of selected technical development measures. The translation of the objectives and targets into technical development measures is done as a pre-modelling exercise by the user.



The FEASIBLE model requires site-specific technical data on the present status of services, and size and state of infrastructure. It also requires that policy makers specify their objectives in terms of specific, measurable, realistic, time-bound (SMART) targets. The model calculates investment, operational and maintenance (O&M) expenditures that would be required to reach specific service levels and environmental targets determined by local policy makers. These expenditure requirements are subsequently compared with forecasted levels and sources of finance. The FEASIBLE compares the cash flow resulting from the expenditure needs with the supply of finance on a year-by-year basis.

A key feature of FEASIBLE is the use of generic cost functions. These cost functions allow easy estimation of the costs of alternative service levels and environmental targets. The generic costs functions were generated based on data from different countries. FEASIBLE has a price correction function to adjust the cost functions to local prices which enable reliable estimates for any country or region.

Since calculations are based on generic cost functions, the calculations are only valid on the aggregated level. When it comes to the detailed project level, feasibility studies are necessary to determine the exact cost profile associated with a particular project.

FEASIBLE can illustrate the estimated effects of possible policy decisions regarding supply of finance from user charges, the public budget, etc. This is compared to the estimates regarding expenditure needs, and a financing gap (positive or negative or zero) is calculated. This information is useful for a consideration of:

- whether the selected objectives and technical development measures are realistic considering the supply of finance situation, and
- Whether other policies for supply of finance should be considered to ensure that the supply of finance matches the expenditure need.

In solid waste management, the model can be used to calculate waste flow and expenditure needs under different assumptions concerning input parameters related to:

- waste generation projection,
- objectives and targets,
- technical development measures, and
- Technical and price correction factors.

Describing and correctly handling the waste flow from waste generators, via specified collection systems, to specified recovery/disposal systems is a central function of the waste model. The model handles up to 17 different fractions from 6 different sources. The model includes 8 different collection methods and 15 recovery/disposal methods. Considering that each combination of collection system and recovery/ treatment methods generates a unique waste flow distribution, the concept for modelling the waste flow is quite complex.

The input data required, and the outputs generated in FEASIBLE when applied in the solid waste management field are summarised in the Table 1.

Table 1 Input requirements and output generation in FEASIBLE when applied in solid waste management sector

Input required in FEASIBLE	Output generated in FEASIBLE
<ul style="list-style-type: none"> • socio-economic historical data and forecasts used for the projection of waste generation • data on waste generation in different sources, • selection of waste collection methods and transport • distribution of different types of waste from different sources on different recovery/disposal alternatives • data used to calculate price corrections for the generalised cost functions • data on present and forecast for future financing by sources and financing instruments. 	<ul style="list-style-type: none"> • waste flow (amount, distribution of fractions from different sources on collection systems and recovery/disposal facilities, output from recovery/treatment facilities, degree of recycling/recovery of biodegradable and packaging waste) • cost of operations, maintenance, and re-investments • capital cost of new investments • supply of finance by sources and financing instruments.

A Financing strategy is basically a set of strategic sector development targets and the scenarios to achieve them. These scenarios implicate the absence of a financing (cash flow) gap (no deficit). In other words there should be a balance between the expenditure and the funds available.

The development of the financing strategy includes selecting strategic goals for sector development and a scenario(s) to achieve them that meet the country's priorities, and are technically and financially feasible and affordable.

The financing strategy does not provide final answers to all questions, but it assists in defining priority actions. This strategy could be used as a basis for the creation of a realistic long-term (10-20 years) financing and investment programme in the considered sector for the country (or for the region).

The detailed description and substantiation of the **Methodology for the development** of financing strategies includes over one hundred pages (see (1), (2) in the list of references). Therefore, only a brief description is presented here. The methodology includes the following elements:

- **Study of the current situation in the defined sector**

With respect to the domestic/municipal waste (DW/MW) management sector, the following issues are studied: service coverage of the population; the quantity and quality of services; the technical condition of the fixed assets and the main technical problems in the sector; environmental and sanitary indicators and problems; assessment of the actual amounts of funds to cover current and future costs from different sources (see Table 1). To collect data about the current situation, specially developed **questionnaires** are used (see COWI, 2001).

- **Using the computerized model FEASIBLE**

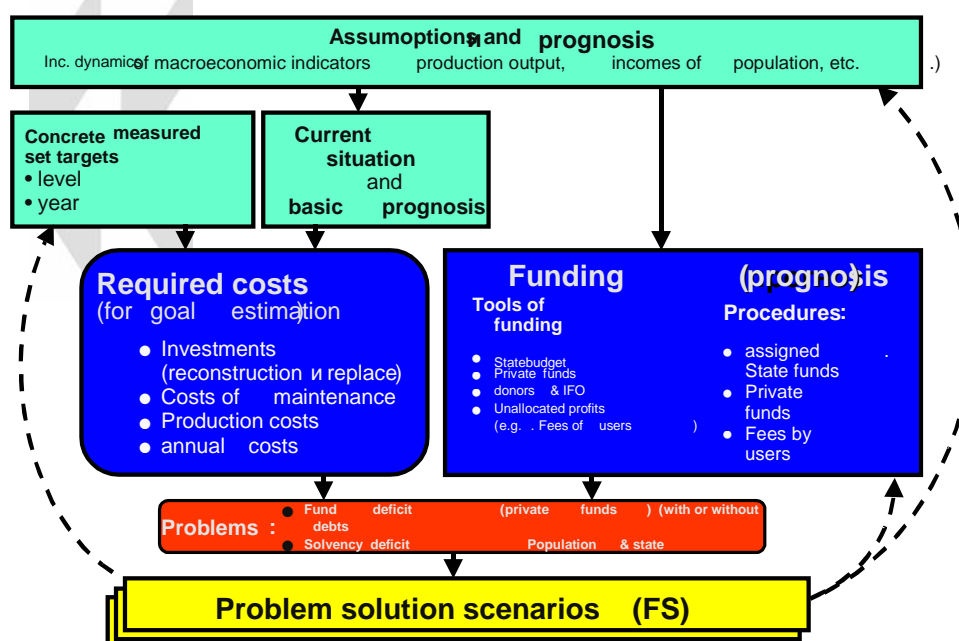
The computer **model FEASIBLE**¹ makes it possible to assess financial results of implementation of different sector development scenarios. **In the model the demand for, and supply of finance are presented as cash flows**, i.e. depreciation is not taken into account, since in reality it does not result in the outflow of cash (although it is a cost item from the economic point of view).

The financing strategy is determined by interactive use of the computer model FEASIBLE when we apply different assumptions regarding mobilization of additional financial funds or reallocation of the available financial resources. The general logic for the use of the model in analyzing scenarios and developing the strategies is presented below in the figure.

The **input data** for the model used for cost assessment include multiple indicators characterizing the technical conditions of the available MW infrastructure, the actual and forecasted demand for services, the dynamics and the structure of production costs and other data.

¹ This model was developed by the consulting company COWI using methodological guidelines of the OECD/EAP Task Force Secretariat and with financial support from the Danish Government.

MODEL



Source: OECD Work group Secretariat for NEAP

- **Setting of targets and cost assessment**

As a result of intensive dialogue and discussions between the Work group experts and representatives of the concerned ministries and departments in RO Administrations, *specific, measurable, agreed, realistic and time-bound (SMART) targets have been defined for the development of the analysed sector.*

- **Use of generic costs functions** (see above)
- **Assessment and forecast of available funds**

It includes analysis of the dynamic and a prognosis of some indicators, including: main macroeconomic indicators; the number of population, the standard of living, the level of incomes and the structure of spending of the population; the demand for products (services) in the analysed sector; analysis of consolidated budgets; amounts and prospects of loans, grants, etc. All this is used to forecast amounts of funds available for current and capital expenditure from all sources.

- **Assessment and analysis of the financing gap**

By comparing the needs for current and capital expenditure with the available funds it is possible to assess the financing gap (deficit or surplus). The assessment is based on the required operational safety, reliability and sustainability of the infrastructure as well as expenditure that are required for achieving the specified development targets.

In this case, not only the amount of total monetary funds is considered, but also its analysis is made in terms of possible coverage of different types of expenditure needs, such as **capital expenditure** (new construction, reconstruction and expansion of production facilities, recovery of worn fixed assets) and **current expenditure** for operation, service and repair of fixed assets, knowing the fund deficit structure is important for identification of main problems with funding and determination of priority measures for their solution.

The analysis also includes **the affordability assessment** of the baseline scenario and of the expenditure needs for achieving the specified sector development targets, for the population and the national economy (or the region) as a whole. Affordability means that the share of

public expenditure on given sector and share of payment for its services in expenditures of the consolidated budget of the country (region) as well as in the budget of households should not exceed some specified level. Decision about which share (%) is acceptable and affordable is a political decision depending on individual preferences of population, and on the levels of income and priorities of specific country.

- **Coverage of the funding deficit**

It includes analysis of opportunities for a reduction or elimination of a funding deficit for various development targets and packages of social and economic, budgetary, tariff and environmental policies. In particular, according to the adopted methodology, the following ways of solving financial problems in the MSW sector are considered that are not mutually exclusive.

- **To ensure more rational use of available resources;**
- **To mobilize additional resources;**
- **To set realistic targets with regards to the quantity and quality of services in the sector and to develop a financial strategy.**

It includes analysis of combined packages of measures (simultaneous increase of funds and correction of targets). The end target of analysis is verification of feasibility of specific targets set for the development of the analyzed sector and defining targets and scenarios for their achievement, where the funding needs coincide with realistic opportunities for funding from all sources.

- **Assessment of expenditure needs for achieving the specified targets and demonstration in what way they could be funded – all this constitutes a financial strategy *stricto sensu*.**

Advantages of the FEASIBLE model

- FEASIBLE model allows for a quick pre-feasibility level estimates without developing design and cost documents, as well as for assessing financial consequences of selection of specific targets for the development of the MW sector, and using different sources and tools of funding and measures for mobilisation of additional resources.
- Besides, the FEASIBLE model allows a rapid “sensitivity analysis, i.e. the dependence of the result (the need in funds and the amount of expected funds) when various parameters are changed.

Limitations of the FEASIBLE model and Financing strategy methodology

The approach used also has some limitations, in addition to its advantages:

- **The financial strategy cannot substitute for the Master plan, nor for the comprehensive MW sector development program** for a country (or region), however, rather it can prove that the targets specified in the plan are feasible or, on the contrary, are overestimated or underestimated, given the financial situation, i.e. it can be very important for the process of target setting. Accordingly, the financial strategy may be considered as a financial part of the Master plan, and the comprehensive MW sector development program.
- **The FEASIBLE model is not designed for optimization** of the selection of measures in terms of cost effectiveness and environmental requirements. It can only be used to estimate financial consequences of the specific targets and scenarios.

This and other limitations of the model and of financial strategies are summarized in the box below:

FEASIBLE model and the Financing Strategy cannot substitute for:

- The general (Master) plan of the sector management and development (sectoral targeted programme)
- Priorities and targets setting for the MW sector development
- Definition of the policy and its effective implementation
- The detailed sectoral investment programme and its feasibility assessment
- Optimization of the selection of technical solutions and optimization of costs
- Willingness to pay and Ability to pay assessment, affordability of user charges for different groups of the population

When decisions are made based on the results of financing strategies, it is necessary to also take into account that all calculations for the model, first, have a margin for uncertainty, secondly, are based on a number of assumptions that can deviate from actual conditions, and thirdly, assume proper operation, maintenance, repair and timely replacement of assets. If these assumptions are not correct, then actual expenditure may significantly deviate from the estimates made using the model.