

## CSO COSTING GUIDELINES

This document aims to assist State-Owned Enterprises (SOEs) to undertake costing of Community Service Obligation (CSO) activities. The document is organised as follows:

1. Objective of costing CSOs
2. Avoidable Cost methodology
3. Fully-Distributed Cost and Average Cost methodologies
4. Example

### Objective of costing

The objective of costing CSOs is to estimate the economic cost of the resources that the State Owned Enterprise (SOE) is devoting to the required output (i.e. the CSO product or service). This is the real resource cost or opportunity cost of the output in question. This concept of cost is not the same as accounting cost, which aims to measure the actual expenditure pertaining to the CSO output, and to allocate overheads on a consistent formula across all activities.

The long run avoidable cost methodology is a methodology for approximating the economic cost of providing CSOs. This is the preferred costing methodology for the Solomon Islands Government (SIG) CSO policy framework, and the principle should be followed as closely as possible, even if it cannot be fully applied in some circumstances.

### Long Run Avoidable Cost

Long Run Avoidable Cost (LRAC) includes all costs associated with the provision of the CSO output that would be avoided if the CSO was not carried out by the SOE. It is calculated as the sum of the increases in all costs (i.e variable, semi-variable, and fixed) caused solely by the CSO activity. Any revenue generated by carrying out the CSO is then deducted to arrive at the approximate net economic cost.

Examples of the types of costs to qualify for inclusion in LRAC include direct operating costs (materials, labour, etc), direct capital costs (depreciation or amortisation of non-current assets), and tax and tax equivalents. When calculating LRAC, existing overheads specifically should **not** be allocated to the CSO activity using existing allocation formulas. Overheads should be included in LRAC only if, for example, a new head office activity is created purely to deal with the CSO.

Further, an allowance should be made for returns that could have been achieved if resources had been used commercially. This includes the cost of borrowing and an appropriate return on equity (i.e. provision for “normal profit”) for additional borrowing or equity funding required solely to finance the CSO activity. This accounts for the economic concept of ‘opportunity cost’ whereby resources used solely for the production of the CSO are no longer available to use in other (profitable) parts of the business.

The key element of the LRAC methodology concerns the treatment of common fixed costs<sup>1</sup> and common overheads. Under the long run avoidable cost methodology, neither common fixed costs nor common overheads are included in the cost estimate of the CSO because they would still be incurred by the SOE in the absence of the CSO.

There are situations where LRAC may not be the most appropriate method or, because of practical difficulties, simply cannot be estimated. Examples of such situations are:

- The CSO output is large in relation to total SOE output;
- There are practical difficulties accurately identifying which costs are avoidable (e.g. accounting records are not sufficiently detailed to allow accurate attribution of costs to each output type or to a particular customer group); and
- There is inadequate information about actual demand, which is important for estimating price concession CSO’s<sup>2</sup>. In these situations it may be better to use the Fully-Distributed Cost (FDC) methodology or the Average Cost methodology.

A different difficulty can arise if the economic life of any capital investment exceeds the period of the contract, and the sale value of the assets in Solomon Islands would be much less than their (depreciated) book value. In such cases, the depreciation rate used to calculate the LRAC may need to be specifically calculated for the period of the contract to end with an estimated disposal value.

### **Fully-Distributed Cost and Average Cost**

The Fully-Distributed Cost method includes all fixed and variable costs directly pertaining to the CSO output, as per the LRAC method. Unlike LRAC, Fully-Distributed Cost includes a proportion of the common fixed costs and common overhead costs. The proportion of common fixed costs and common overhead costs allocated to the CSO output is usually done on a pro-rata basis.

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<sup>1</sup>Common fixed costs are those which are not directly attributable to any particular activity. That is, fixed costs that are shared by the commercial activities of a SOE and CSO provision. An example is jointly used capital costs.

<sup>2</sup>Price concessions are defined as the reduction in price charged to certain consumers of a core service provided by a SOE.

The Average Cost method simply calculates the average unit costs for all similar outputs (i.e. CSO and commercial outputs) and uses this as the estimate for per-unit CSO cost. Total CSO cost is estimated by multiplying this average unit cost by the number of CSO output units.

In situations where the CSO activity has a significant balance sheet impact which requires additional borrowing and equity funding, both the Fully-Distributed Cost and Average Cost method should include a provision for borrowing costs plus normal profit (sometimes these are together referred to as "return on capital").

If an alternative methodology to LRAC is to be used, the reasons for this must be clearly stated in the CSO submission/application (discussed in ESTABLISHING NEW CSO's of the CSO policy framework document) and agreed to by the SOE Monitoring Unit.

For new CSOs, it is likely that many input costs will be unknown. In this case, benchmarking with industry best practice is essential to get an idea of efficient costs. If possible, tenders should also be used to reveal efficient costs.

### Example – Water services

Below is a hypothetical example to illustrate how the LRAC, Fully-Distributed Cost, and Average Cost methodologies may be applied.

For this example, let us suppose there are health problems in Kia relating to water-borne disease (e.g. giardia, cholera, worms, and typhoid) and there is evidence which demonstrates that lack of access to affordable clean drinking water is a key factor contributing to this problem.

To address this problem, the Government is considering developing a water grid in Kia and providing this water to Kia households at a subsidised rate (equal to the Honiara water tariff). The proposed water subsidy would be paid to SIWA as an operational subsidy. The table below outlines the main (hypothetical) parameters associated with the provision of water services. For the purposes of this illustration, it is assumed that Solomon Islands Water Authority (SIWA) currently only provides water services to Honiara and no services are provided to Kia.

Table 1. Parameter table for provision of water services to Honiara and Kia

<i>Quantity of water supplied</i>	
Forecasted water demand to Kia @\$1.80/ML (ML)	10
total water supplied to Honiara @\$1.80/ML (ML)	100

<i>Costs of water service delivery</i>	
direct operating cost @ Kia (\$)	5
direct operating cost @ Honiara (\$)	50
overheads (\$)	22
capital cost @Kia (\$)	20
capital cost @ Honiara (\$)	100
return on equity @ Kia (\$)	2
return on equity @ Honiara (\$)	10
<i>Pricing of water services</i>	
full-cost recovery pricing @ Kia (\$/ML)	2.90
full-cost recovery pricing @ Honiara (\$/ML)	1.80

Further, assume that overhead costs (\$) would not increase as a result of the subsidised water tariff CSO as no new head office activity is created purely to deal with the CSO.

#### *Identifying direct and common costs*

The first step to cost the uniform tariff CSO is to identify which costs are directly attributable to the CSO outputs, and which costs are common to other commercial outputs.

At the uniform tariff rate of \$1.80/ML, delivery of water services to Kia is not commercial (because it is below the full-cost recovery rate of \$2.90/ML) and thus SIWA would not choose to provide any water services to this area in the long run. Accordingly, all capital costs, operating costs, and associated provisions for normal profit pertaining to Kia are considered direct costs and thus avoidable in the long run.

Overhead costs are jointly incurred for Kia and Honiara water service delivery outputs and thus are common costs. Overhead costs do not increase as a result of the CSO output and so are avoidable.

#### *Calculating LRAC*

All direct costs are included in the LRAC calculation. These include direct operating cost @ Kia, capital cost @ Kia, and return on equity @ Kia.

In this example, overhead costs are the only common costs and do not increase as a result of the CSO output. Under the LRAC methodology, common overheads are not included in the cost estimate of the CSO because they would still be incurred by SIWA in the absence of the CSO.

Table 2 below shows the calculations for costing the subsidised water tariff CSO for Kia using the LRAC methodology.

Table 2. Calculation of cost for subsidised water tariff CSO at Kia using Avoidable Cost methodology

	Calculation	\$
direct operating cost		5
Overheads		0
direct capital costs		20
return on (direct) equity		2
gross CSO cost		27.0
<i>less revenue</i>	number of units provided (10ML) * Honiara tariff rate (\$1.80/ML)	18.0
net CSO cost	gross CSO cost (27) minus revenue (18)	9.0
per-unit CSO cost	net CSO cost (9.0) / number of units provided (10)	0.9

#### *Calculating Fully-Distributed Cost*

The Fully-Distributed Cost method includes all fixed and variable costs directly pertaining to the CSO output, as per the LRAC method. Unlike the LRAC approach, Fully-Distributed Cost includes a proportion of the common fixed costs and common overhead costs.

As mentioned above, the only common costs are overhead costs. Under the fully-distributed cost, a pro-rata share of overhead costs is typically used to allocate overhead costs to the Kia subsidised water tariff CSO output.

Table 3 below shows the calculations for costing the subsidised water tariff CSO for Kia using the fully-distributed cost methodology.

Table 3. Calculation of cost for Kia subsidised water tariff CSO using Average Cost methodology

	Calculation	\$
direct operating cost		5
overheads	pro-rata share - $(10/(10+100)) * 22$	2.0
direct capital costs		20
return on (direct) capital		2
gross CSO cost		29.0
<i>less revenue</i>	number of units provided (10ML) * Honiara tariff rate (\$1.80/ML)	18.0
net CSO cost	gross CSO cost (29) minus revenue (18)	11.0
per-unit CSO cost	net CSO cost (11) / number of units provided (10)	1.1

### *Calculating Average Cost*

Under the average cost method, all costs for Kia and Honiara are pooled and then averaged across total output. This method should only be used if accounting records do not allow for operating or capital costs pertaining to Kia outputs and Honiara outputs to be separated.

Table 4 shows the calculations for costing the uniform tariff CSO using the average cost methodology.

Table 4. Calculation of cost for Kia subsidised water tariff CSO using Average Cost methodology

	Calculation	\$
total operating cost	sum of Kia (5) and Honiara (50)	55
total overheads		22
total capital costs	sum of Kia (20) and Honiara (100)	120
total return on capital	sum of Kia (2) and Honiara (10)	12
gross cost		209
<i>less revenue</i>	number of units provided (10+100) * Honiara tariff rate (\$1.80/ML)	198
net loss	gross CSO cost (209) minus revenue (198)	11
per-unit CSO cost	net CSO cost (11) / number of units provided (10+100)	0.1
net CSO cost	number of CSO units (10) * per-unit CSO cost (0.1)	1.0