Building Upgrade Finance Cost Savings Methodology

An approved methodology pursuant to Clause 12 (2)(b)(ii) of Schedule IB, which is to be inserted into the *Local Government Act 1999*, and pursuant to the [DRAFT] *Local Government (Building Upgrade Agreements) Regulations 2016*

1. Purpose

This document sets out the approved methodology for calculating a reasonable estimate of cost savings made or to be made by lessees of a building as a consequence of upgrade works under a building upgrade agreement.

This methodology applies if:
- The upgrade works improve the efficiency of a utility that is normally paid for by the lessee, either directly to the utility supplier or through provisions of a lease; and
- The lessor intends to require that the lessee make a contribution towards a building upgrade charge.

This methodology calculates the cost savings made or to be made by lessees for efficiency improvements to a building for a number of utilities. Where the upgrade improves the efficiency of multiple utilities, the methodology should be applied separately for each utility.

All terminology used in this document is to be interpreted in accordance with Schedule 1B which is to be inserted into the *Local Government Act 1999* unless otherwise defined.

2. Definitions

This section outlines the terminology used in the approved methodology and a corresponding guide for easy reference. Further definitions are defined in relevant sub-methods.

Attribution Factor is the proportion of the Utility Savings that may be attributed to the lessee subject to this calculation.

Billing Unit is the physical unit that the Utility Supplier uses to measure and bill utility use, such as kilowatt-hours (kWh) or megalitres (ML).

Confidence Factor is the proportion of Utility Savings that may be confidently attributed to the lessee, as defined by this methodology.

Conversion Factor is the appropriate factor to convert Utility Savings into Billing Units.

Estimate Period is the time period for which this estimate is determined in years.

Lessee Savings is the reasonable estimate of cost savings to a particular lessee arising from upgrade works.

Method Boundary is the scope of the upgrade works for the purpose of undertaking the estimate. The Method Boundary may be a whole building (for example, a whole building retrofit) or a specific component within a building (for example, the lifts in a commercial building).

NABERS is the National Australian Built Environment Rating System, a national rating system that measures the energy efficiency, water usage, waste management and indoor environment quality of a building or tenancy and its impact on the environment. Note that only Energy and Water NABERS ratings may be used to calculate lessee savings for the upgrade works.

Predicted Savings is an estimate of Lessee Savings that forecasts the expected savings arising from the upgrade works over an Estimate Period.

Savings Made is an estimate of Lessee Savings that is based on the measured savings arising from the upgrade works over the previous 12 months.

Total Savings is the total annual financial savings from the upgrade works for a Utility.

Utility is the service that is the subject of the upgrade works, including electricity, gas or water, which is normally paid for by the tenant either directly to a Utility Supplier or indirectly through the lessor. Utilities that are billed separately to multiple parties in the building should be treated separately. For example, common area electricity and lessee electricity, if billed separately, are considered separate utilities.

Utility Savings is the total annual efficiency improvement arising from the upgrade works, expressed in appropriate units for that utility and calculated in accordance with this methodology.

Utility Supplier is the entity that the lessor or lessee pays for the use of the utility, such as an energy retailer or water utility.

Utility Tariff is the cost of the utility to the lessee, expressed in dollars per Billing Unit.

3. Method applicability

This methodology applies to upgrade works that are the subject of a building upgrade agreement where all of the following apply:
- The upgrade works improve the efficiency of a utility in the building
- The lessee would normally pay for part or all of this utility consumption, either directly to the utility supplier or through provisions of a lease
- The lessor intends to require that the lessee make a contribution towards a building upgrade charge
- The upgrade works fall within the following categories:
  - A lighting upgrade that meets the requirements in sub-method P1 – Lighting
  - A renewable energy installation that meets the requirements of sub-method P2 – Renewable Energy
  - A building upgrade that improves the NABERS Energy or Water rating of a commercial building, and meets the requirements of sub-method P3 – NABERS
  - Any project that improves the electricity and/or gas efficiency of the building, and meets the requirements of sub-method P4 – Energy Audit
  - Any project that improves the electricity, gas or water efficiency of the building, and meets the requirements of sub-method P5 – Project Impact Assessment with Measurement and Verification.

Note that non-utility savings arising from the building upgrade are deemed to have zero financial benefit to lessees under this method. However, lessees may still consent to make a contribution using an alternative consent approach or in recognition of broader benefit.

4. Method boundary

The method boundary must be established prior to applying this cost savings methodology. The boundary should identify:
- Building upgrade details, including:
    - A summary of upgrade works – e.g. common area lighting upgrade
    - Utilities affected by the upgrade works – e.g. common area electricity, lessee electricity, gas or water
    - Any other upgrades to the building for which this methodology will be applied, and confirmation that method boundaries do not overlap and that savings are mutually exclusive – e.g. where Lessee Savings are estimated separately for upgrades affecting multiple building elements or for staged upgrades
- Details of affected lessees – name, location in building
- How lessees normally pay for the affected utilities, including summary of utility supply details for each utility affected by the upgrade works and billing arrangements showing how lessees normally pay for the utility – e.g. lessor requires all lessees to pay a contribution towards common area electricity bills through lease agreement
- The type of Lessee Savings estimate – whether the estimate of Lessee Savings is Predicted Savings or Savings Made
- Estimate Period – the start and end dates for the period to which the estimate of Lessee Savings applies.

5. Calculate total annual upgrade works savings

A reasonable estimate of total annual cost savings arising from each utility improved by the upgrade works must be made in accordance with the following calculation:

$$TS = US \times CV \times CF \times UT$$

Where:

TS = Total Savings for a utility, expressed in $

US = Utility Savings, expressed as kilowatt-hours (kWh), megajoules (MJ), kilolitres (kL), etc., as calculated in accordance with Step 8 below

CV = Conversion Factor as calculated in accordance with step 9 below

CF = Confidence Factor, set in accordance with Step 11 below

UT = Utility Tariff, expressed in $/Billing Unit.

Where the upgrade works result in Utility Savings for more than one utility, Step 5 must be repeated to establish Total Savings for each utility.

6. Calculate lessee savings

A reasonable estimate of cost savings for each lessee for each utility must be made in accordance with the following calculation:

$$LS = TS \times AF \times EP$$

Where:

LS = Lessee Savings, expressed in $

TS = Total Annual Savings, expressed in $, as calculated in accordance with Step 5 above

AF = Attribution Factor (percentage attribution) as calculated in accordance with step 10 below

EP = Estimate Period as calculated in accordance with step 13 below.

Where the upgrade works will result in savings for more than one utility, Step 6 must be repeated to establish Lessee Savings for each utility.

7. Lessee Savings for upgrade works with multiple utility savings

Where the upgrade works will result in Utility Savings for more than one utility, the total Lessee Savings for each lessee is calculated in accordance with the following calculation:

$$LS_{total} = LS_1 + LS_2 + \cdots + LS_n$$

Where:

LS_{total} = total Lessee Savings for a particular lessee, expressed in $

LS_1 = Lessee Savings for utility 1, as calculated in accordance with step 6 above

LS_2 = Lessee Savings for utility 2, as calculated in accordance with step 6 above

LS_n = Lessee Savings for utility n, as calculated in accordance with step 6 above

Note that step 5 and 6 above must be repeated to establish Lessee Savings for each utility that is affected by these upgrade works.

8. Utility Savings

The Utility Savings attributable to the upgrade works must be calculated in accordance with one of the following sub-methods:
- Lighting sub-methods as set out at sub-method P1 (for Predicted Savings) and sub-method M1 (for Savings Made), or
- Renewable Energy sub-methods as set out at sub-method P1 (for Predicted Savings) and sub-method M2 (for Savings Made), or
- NABERS sub-method as set out at sub-method P3 (for Predicted Savings) and sub-method M3 (for Savings Made), or.
- Energy Audit sub-method as set out at sub-method P4 (for Predicted Savings), or
- Project Impact Assessment with Measurement and Verification sub-methods as set out at sub-method P5 (for Predicted Savings) and sub-method M5 (for savings made).

Note that estimates of Savings Made must use the sub-method that corresponds to the estimate of Predicted Savings for the upgrade works as outlined in the table below

Sub-method type	Predicted Savings sub-method	Corresponding Savings Made sub-method
Lighting	P1	M1
Renewable Energy	P2	M2
NABERS	P3	M3
Energy Audit	P4	M5 or M3
Project Impact Assessment with Measurement and Verification	P5	M5

Note that where sub-method P4 (Energy Audit) is used to estimate Predicted Savings for an upgrade works, estimates of Savings Made will use sub-method M5 (Project Impact Assessment with Measurement and Verification) or M3.

9. Conversion Factor

The Conversion Factor attributable to the upgrade works is to convert the calculated Utility Savings into the Billing Units in which the utility is billed. The Billing Unit for each utility subject to the upgrade work is to be established from utility bills.

The following table shows common Conversion Factors that may apply for upgrade works that result in electricity savings.

	Convert to electricity Billing Units		
Convert from Utility Savings unit	MWh	kWh	GJ
MWh	-	1000	3.6
kWh	0.001	-	0.0036
GJ	0.2778	277.78	-

For example, if the Utility Savings for an electricity upgrade project are measured in megawatt-hours (MWh), and the Billing Unit for electricity is kilowatt-hours (kWh), the Conversion Factor is 1000.

10. Attribution Factor

The Attribution Factor is to be set at the proportion that the lessee pays for the utility subject to this calculation. That is:
- For upgrade works that improve the efficiency of a utility that is normally wholly paid by the lessee, either directly to the utility provider or to the lessor, the attribution factor is 1
- For upgrade works that improve the efficiency of a utility that is normally paid for by a number of parties including the lessee, the attribution factor is to be set using the same formula that determines the proportion of the total bill that the lessee would normally pay (this is normally established in the building lease)
- If the lessee does not normally pay for the utility, the attribution factor is 0.

The Attribution Factor must be calculated for each lessee making contributions towards a building upgrade charge.

11. Confidence Factor

The confidence factor is to be set at:
- 0.8 for Predicted Savings calculations using sub-methods P1, P2, P3 and P4
- 1 for Predicted Savings calculations using sub-method P5
- 1 for Savings Made calculations using sub-methods M1, M2, M3 and M5.

12. Utility Tariff[1]

The tariff to be used for the reasonable estimate is to be based on the applicable contracted tariff for the utility as purchased by the Lessee for the Estimate Period.

Where the contracted tariff changes based on the level of consumption, the marginal rate for the most recent billing period will be used (even though the consumption level may decrease due to the upgrade).

For large electricity customers, the Utility Tariff should include all volume based charges levied on electricity use, including distribution and network loss factors, government and network charges.

If the Utility Supplier applies a discount to the total bill (for example, a Guaranteed Discount negotiated as part of the utility contract) any utility tariffs sourced from that bill must be discounted by this amount.

Where the estimate period extends beyond contracted dates, the last contracted utility price is to be applied from that date. A CPI of +3% per annum may be incorporated in the calculations.

Where multiple tariffs are used during the Estimate Period, for example where an electricity tariff changes based on time of day, or the tariff changes during the Estimate Period, a weighted value will be used for the tariff, based on total electricity consumption within each tariff period:

$$UT = \sum_i (UT_i \times E_i) \Big/ \sum_i E_i$$

Where:
- i sums across each different tariff
- UT_i is the ith utility tariff for the contracted billing period (discounted if the Utility Supplier applies a discount to the bill)
- E_i is the electricity consumption corresponding to the ith utility tariff for the contracted billing period.

When the upgrade works includes a renewable energy installation and the energy generated is sold to the lessee, the Utility Tariff applied to savings for this energy is to be discounted by the tariff charged for the renewable energy:

$$UT = UT_{network} - UT_{renewable}$$

Where:
- $UT_{network}$ is the utility tariff charged to the lessee for electricity purchased from the electricity network, and;
- $UT_{renewable}$ is the utility tariff charged to the lessee for electricity generated by the renewable energy installation that is part of the upgrade works.

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[1] For water utility tariff is taken to have the same meaning as rate

13. Estimate Period

The Estimate Period is calculated as:

$$EP = \frac{Number\ of\ days\ for\ which\ the\ estimate\ applies}{365}$$

Where:
- For Predicted Savings estimates, the estimate period must match the corresponding contribution that the lessor requires the lessee to pay towards a building upgrade charge.
- For Savings Made estimates, the estimate period must match the corresponding reporting period for the upgrade works.

14. Supporting evidence

The building owner should retain the following records in relation to the calculation of the reasonable estimate:
- Method boundary documented as detailed in step 3
- Records supporting the estimated Utility Savings as specified in the sub-method used
- Formula used to establish the Attribution Factor
- Supporting documentation for the Utility Tariff, such as a copy of the contract under which the utility is provided, or bills from the utility supplier showing the appropriate tariff.