Technical Frequently Asked Questions – Part L 2021 and the Energy Assessment Guidance 2022

1. I am having issues getting the Building Emission Rate (BER) and Target Emission Rate (TER) to match the BRUKL/sim outputs. How do I address this?

The GLA Carbon Emissions Reporting spreadsheet v2.0 has been simplified and is now based on TER, BER (for Part L2) and DER (for Part L1) values along with solar PV generation figures to enable CO_2 emission savings to be reported correctly at each stage of the energy hierarchy. This significantly reduces the data inputs required.

2. What steps should be followed to report CO_2 emissions at each stage of the energy hierarchy?

Please follow the step-by-step approach outlined below for each building modelled using Part L 2021 Building Regulations compliance software:

Baseline

1. Model the final proposed building specification (following all stages of the energy hierarchy to meet London Plan policy) to obtain the TER and DER (Part L1)/BER (Part L2) results.
2. Add the TER outputted in Step 1 into the 'Part L Outputs' tab under the baseline column (column E) of the GLA Carbon Emissions Reporting spreadsheet from the final proposed building specification.
3. If applicable, add the TER PV output into (Column F) using the following format:
   a. Part L1, use the **kgCO₂/year** figure taken from the SAP full calculation worksheets (Rows 269 or 380). Part L2, use the **kWh/m²/year** figure taken from the BRUKL document.

Be Lean

4. Model the 'Be Lean' specification in Part L 2021 and add DER/BER results into the 'Be Lean' results column (Column G). See section 7 of the 2022 Energy Assessment Guidance which sets out what measures are to be included in the 'Be Lean' model. Please also note Paragraphs 7.9 - 7.11 of the guidance for assumptions on heating and hot water systems. Note that where solar PV is included in the baseline tab this will automatically be added into the 'Be Lean' and 'Be Clean' columns.

Be Clean

5. Model the 'Be Clean' specification in Part L 2021 and input DER/BER results into the 'Be Clean' column (Column H). See section 9 of the guidance which sets out what measures are to be included in the 'Be Clean' model.

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<u>Be Green</u>

6. Input DER/BER results from Step 1 into the 'Be Green' column (Column I). See section 10 of the guidance which sets out what measures are to be included in the 'Be Green' model.

3. SAP 10.2 carbon emission factors for grid electricity are now monthly and not annual. Does the GLA Carbon Emissions Reporting spreadsheet account for this?

Yes. To account for Part L 2021 using monthly CO_2 emission factors the GLA Carbon Emissions Reporting spreadsheet (v2.0) has been updated and no longer requires individual energy consumption to be inputted.

4. The Part L 2021 baseline includes renewable technology. How can CO_2 emission improvements from 'be lean' and 'be clean' measures be shown?

Where the Part L 2021 baseline includes solar PV, the impact of renewable energy will need to be removed under the 'Be Lean' and 'Be Clean' stages of the energy hierarchy to enable CO_2 emission savings to be reported correctly at each stage. To address this the GLA Carbon Emissions Reporting spreadsheet automatically modifies the actual building CO_2 emission performance reported at the 'Be Lean' and 'Be Clean' stages by removing the CO_2 emissions associated with any solar PV in the Part L 2021 baseline (if present). The actual solar PV that is proposed to be installed for the development should then be included in the modelling to determine the 'Be Green' CO_2 emissions, which will then be compared with the Part L 2021 baseline without modifications.

Depending on the final proposals the notional building may also include renewable or low carbon heating systems in the Part L 2021 notional building used for the baseline. When this is the case the 'Be Lean' assumptions should include the same notional heating assumptions as the baseline (see question 5 for further information).

5. How do I undertake 'Be Lean' modelling when low carbon or renewable energy heating systems are included in the Part L 2021 baseline?

Where there are low carbon or renewable energy heating systems in the baseline, applicants should use the notional building system type and performance values specified in the Part L 2021 baseline as determined by the final proposed building specification. This means matching the notional building assumptions (i.e. from the TER) in the 'Be Lean' model (DER/BER).

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Part L1:

The Part L1 2021 baseline will ordinarily include a gas boiler as the heating source for the notional building (see SAP 10.2, Appendix R). If low carbon or renewable heating systems are proposed applicants should match the notional building assumptions when reporting CO_2 emission performance under the 'Be Lean' stage of the energy hierarchy. For example, if the final proposed building specification includes heat pumps then the 'Be lean' DER should include the gas boiler in line with the notional performance values.

Please note that for Part L1 the notional building is not always a gas boiler e.g. for developments connecting to an existing heat network. In this case the 'Be Lean' performance for the heating system should assume the same system and performance values as the existing heat network that will be included in the Part L 2021 baseline.

Part L2:

The Part L2 2021 baseline will change depending on the actual heating system proposed. Tables 7 - 10 of the NCM Modelling Guide (2021 Edition) explains the systems and performance values that will be used in the Part L 2021 baseline. For example, under Part L 2021 for a non-residential building proposing heat pumps, the TER for the Part L 2021 baseline would include heat pumps with notional performance values of 2.86 seasonal generator efficiency for hot water and 2.64 seasonal system coefficient of performance for space heating. Where heat pumps are proposed, applicants are required to match the notional building heating type and performance values for heat pumps in the 'Be Lean' case.

6. **Part L 2021 includes a primary energy factor. Why is this not required by GLA?**

Compliance with London Plan Policy SI 2 is assessed against the CO_2 emissions improvement upon Building Regulations, not the primary energy factor. For Building Regulations compliance, applicants will still need to ensure that proposals meet all requirements of Building Regulations, including the primary energy factor.

7. **For the refurbishment baselines, Tables 11 and 12 in the Energy Assessment Guidance require heating system efficiencies to match the applicable notional values for existing buildings. What does this mean?**

For determining the baseline for refurbishments, applicants should assume the same heating and hot water system and generator type in line with the final building specification for the proposed development. System efficiencies used for the baseline must meet the minimum standard values for existing non-residential buildings (see tables 6.2, 6.4, 6.5 & 6.8 in Approved Document L2) and for existing residential buildings (see section 6 of Approved Document L1).