

PATHWAY TO ZERO EMISSIONS

The pathway to zero emissions started with Milton Keynes Council's commitment to reduce carbon emissions by 40% by 2020 against a 2005 baseline for its own operations. The progress against this target has been regularly reported and utilised the data from the Department for Business, Energy and Industrial Strategy (BEIS). It was primarily based on the data MKC submitted under the Carbon Reduction Commitment (CRC) which had some very specific reporting boundaries. The target has been achieved and the target for MK is now to have net zero emissions by 2030 from a 2018/19 baseline.

To ensure MKC has a transparent and specific reporting boundary for emissions the baseline data has been recalculated for 2018/19 to enable the development of the trajectory to net zero by 2030 to be set. This resetting of the baseline has used the data held by MKC to calculate emissions at a more granular level of detail and setting a wider reporting boundary than the CRC used, and has resulted in an increase in emissions. The increase, however, does ensure that all relevant emissions sources have now been reported for Council operations within financial control. From this, opportunities for interventions that will make the most impact in reducing emissions can be more readily identified.

To become net zero by 2030 for the Council's own operations a trajectory for emissions reductions should be mapped to assist with setting carbon budgets and identify opportunities for emissions reduction.

There are two basic approaches available for building an emissions budget trajectory (or target emissions). These are as follows:

- a) Linear - A simple linear regression with a fixed reduction year on year
- b) Exponential - An approach based more on exponential decay. This approach recognises that there are measures which we can take today at scale and pace which are cost effective and represent good practice. This approach works hardest in the early years, recognising that some of the latter reductions are likely to be harder to achieve and takes a more realistic view that around 5% of emissions will be too difficult to reduce and will need treating in other ways. It is recommended that the MKC pathway to net zero follow the exponential trajectory as close as possible.

The pathway to 2030 has been modelled to show a linear and exponential pathway, and a scenario using planned interventions and assumptions about additional scenarios to identify the "gap" that needs to be addressed by additional carbon reduction programmes and investment. It should be noted that with the exception of the conversion of grey fleet (staff business mileage) to EV, all the interventions that have been modelled are in development – this is in contrast to other councils who are beginning to model the "potential interventions", MKC has a programme of activity planned to reduce emissions by approximately 12,000 tCO₂e by 2024.

The options are.

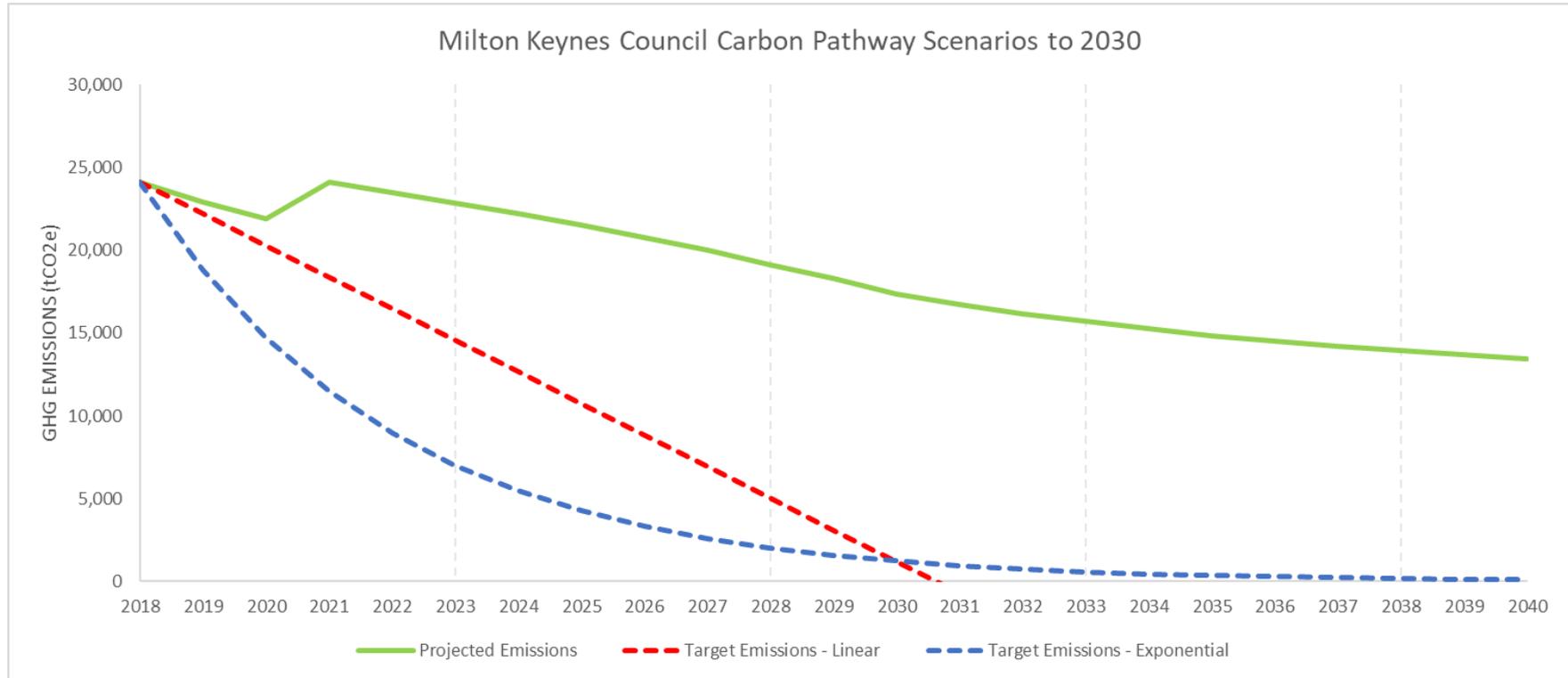
- a) **Do nothing**, rely on decarbonisation of the grid only (figure 1)
- b) **Delivery of a programme of interventions** (figure 2), including
 - Re:fit Energy Performance Contract (planned)
 - Street light LED conversion (planned)

- Fleet conversion to EV and biomethane (planned)
- Grey fleet conversion to EV (staff business mileage – not yet planned)
- Purchase of renewable energy supplies for grid supplied electricity (planned)

The following graphs show that further interventions are required if MKC is to reach net zero emissions for its own operations by 2030.

Figure 1 Target emissions scenarios

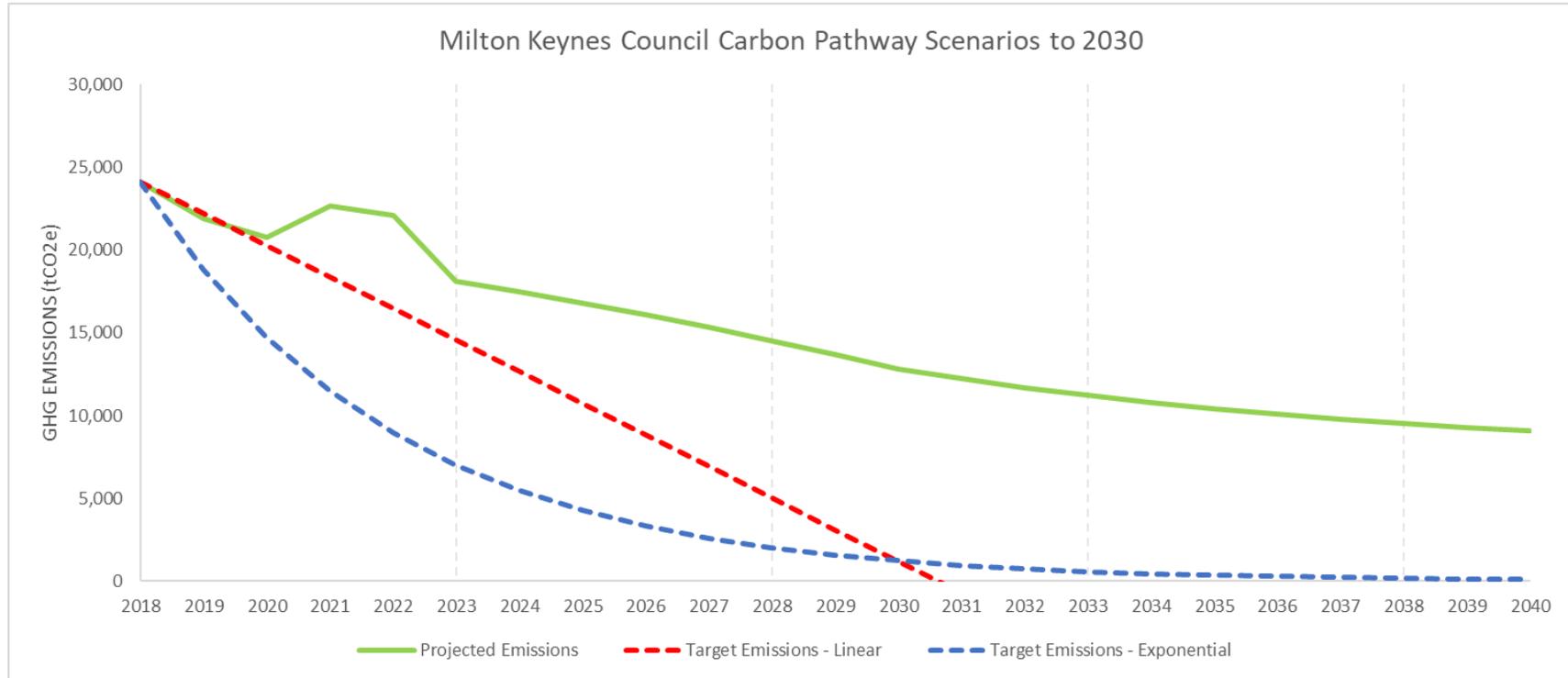
Do nothing scenario – decarbonisation of grid only. Emissions in 2030 17,355 tCO₂e



Source: localpartnerships.org.uk

Figure 2 Target emissions scenarios

Planned interventions completed. Emissions in 2030 12,820 tCO₂e



Interventions: Re:fit tranche 1, fleet conversions, staff business mileage conversion to EV, street lighting conversion to LED

Increase in projected emissions due to BEIS forecast figures for grid decarbonisation higher than actual.

c) **A combination of the decarbonisation of the grid and the delivery of a programme of interventions plus a method to account for the remaining emissions.**

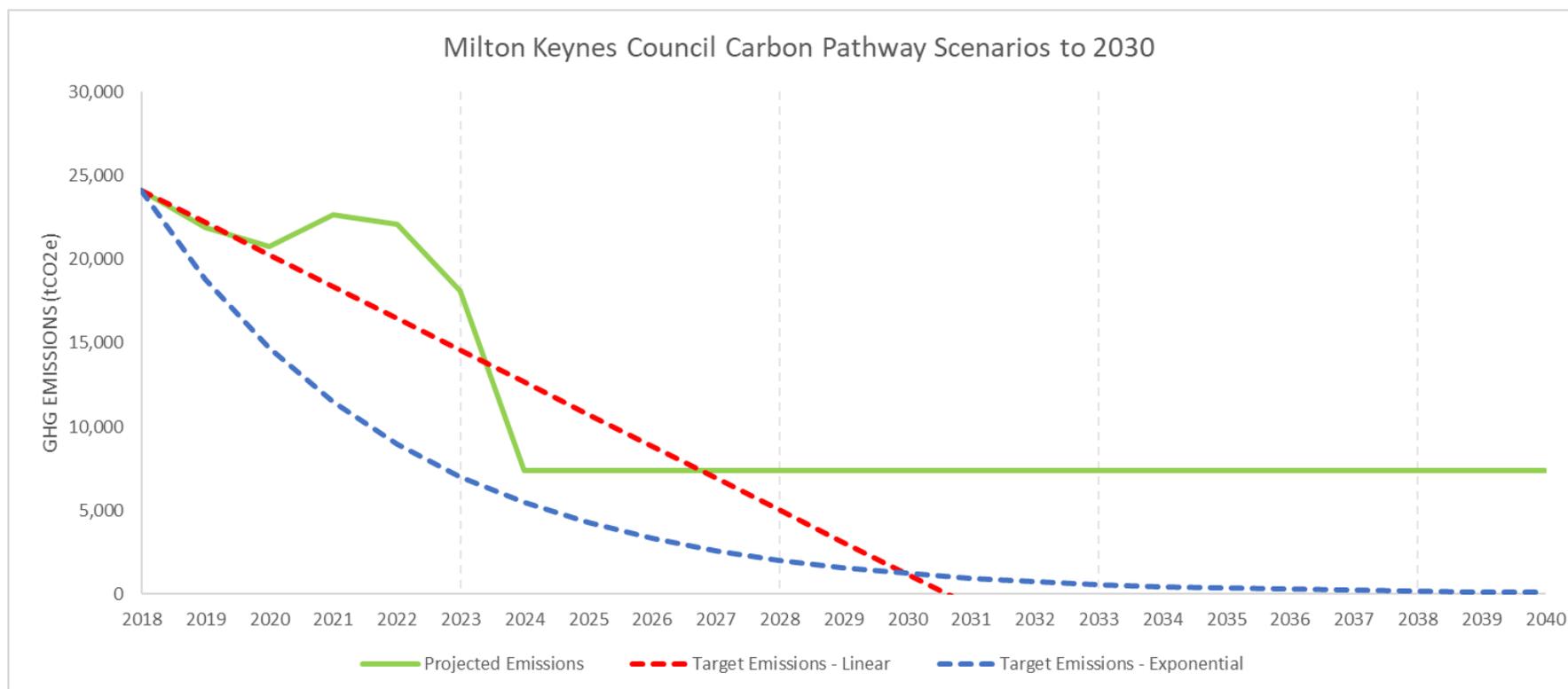
Figure 3 (below) shows what the level of emissions are once all of the planned interventions are accounted for plus a switch to a green electricity tariff to ensure that grid supplied electricity is from renewable sources by 2024 but this highlights that MKC will still need to reduce emissions for its own operations by c 7,000tCO₂e.

To address this emissions gap further, and remain close to the exponential trajectory interventions will be required over the remaining 6 years to 2030. Such interventions will need to become more varied and begin to be designed now, but might include:

- Streetlighting – carbon savings from remainder of the programme to upgrade 19,400 lanterns post 21/22
- Delivery of further tranches of the Re:fit programme across MKC portfolio of buildings and schools.
- Achievement of carbon sequestration from new woodlands – a project currently in development.
- Offset options which could include, for example
 - Development or investment in 31MW of solar would be required to address emissions gap (5MW solar PV requires approx. 6 hectares (c14 acres) or 5 football pitches)
 - Investment in offshore wind farms (RenewableUK/BEIS estimate a single turbine will generate sufficient electricity to offset c25,000 tCO₂e)

Figure 3 Target emissions scenarios

Planned interventions completed, and switch to green tariff. Emissions in 2030 7,370 tCO₂e



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Interventions: Re:fit tranche 1, purchase of green electricity in 2024, fleet conversions, staff business mileage conversion to EV, street lighting conversion to LED

Increase in projected emissions due to BEIS forecast figures for grid decarbonisation higher than actual.