

Sustainability benefits of ChromeOS for Government

How would carbon emissions and costs change if use of Chrome devices and ChromeOS Flex was adopted as a central government strategy?

SUMMARY

With **over 2.2 million End User Computing (EUC)** devices in use by UK central government, the opportunity to cut carbon emissions and costs is very significant. In this study independent specialists Px³ examined the current UK government EUC estate and modelled the impact of **deploying ChromeOS Flex to extend device lifespan** then adopting **Chromebooks and Chromeboxes** as the standard when the current devices needed to be replaced.

Where would be the Key Benefits?

ENERGY SAVINGS (SCOPE 2)

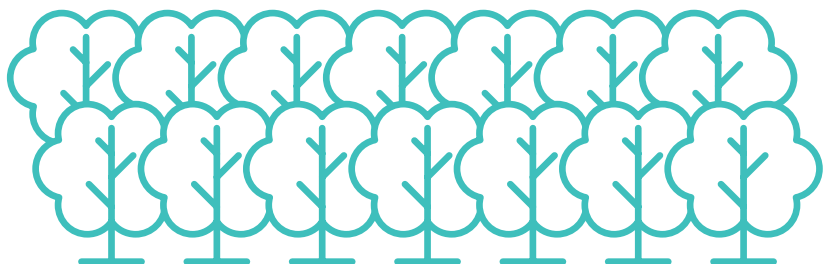
Savings range from 21% (using ChromeOS Flex on a Windows notebook) **to 67%** (replacing a Windows desktop PC with a Chromebox).



With an **average "per device" energy saving of 37%**, by 2030 the strategy would mean an overall **annual energy saving of 23%** across the entire estate with an **annual saving of nearly £9m** at today's rates.



Average annual scope 2 emissions abatement would be 1,008,287 kgCO₂e (30% per device), equivalent to the pollution from driving 3.67m car miles every year and requiring 1,210 forest acres to remove the emissions from the atmosphere.



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SUPPLY CHAIN (SCOPE 3)

Using ChromeOS Flex to extend the lifespan of devices **would reduce annual scope 3 emissions by an average of 42%**. This is a **saving of 56,995,083 kgCO₂e**, equivalent to **pollution from driving 207.5m car miles every year** and **requiring 68,394 forest acres to remove the carbon** from the atmosphere.

Even if we assume that Chrome devices cost the same as their Windows equivalent, the strategy returns an average annual device procurement **cost saving of £68,236,988**.

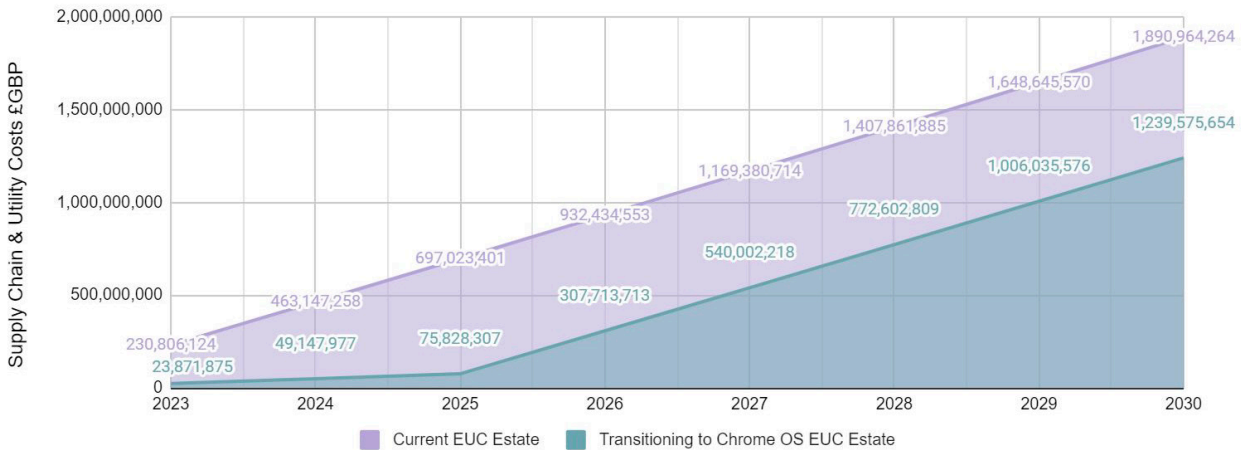
SUMMARY

Average total annual GHG emissions abatement from a ChromeOS strategy is calculated at 41%, removing 58,003,370 kgCO₂e from the atmosphere. This is **equivalent to pollution from driving 211.2m car miles every year** and would require 69,604 forest acres to remove the carbon from the atmosphere.

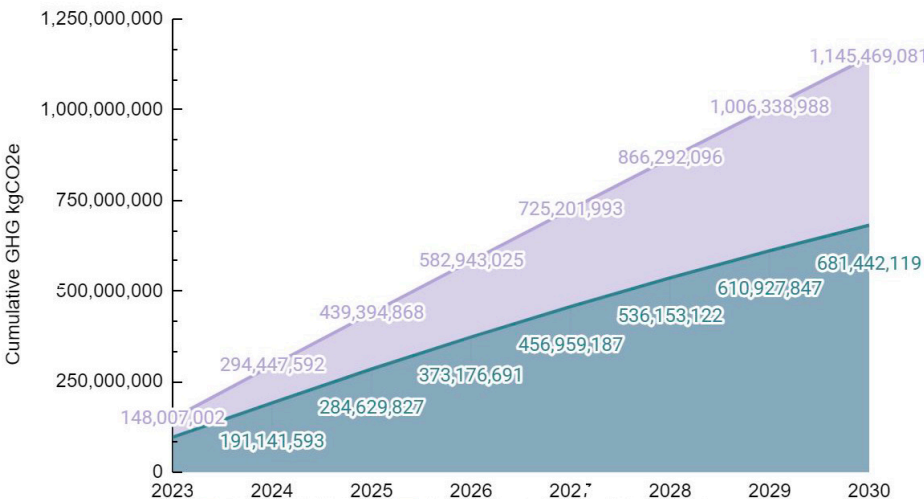


The average annual cost saving is 34%, resulting in a saving of £72,893,952.

CUMULATIVE COST SAVINGS



CUMULATIVE EMISSIONS SAVINGS



Taken over an 8 year period (from 2023 to 2030) **£651,388,610 is saved by reducing utility and procurement costs**, equivalent to reducing total end user computing costs **by 34% ongoing**.

Over the same period a cumulative **464,026,962 kgCO₂e would be avoided**, equivalent to **1.7bn car miles** and would otherwise require **70k forest acres** to remove the carbon from the atmosphere annually.