

Real Impact or Easy Scapegoats?

Response to the Department for Energy Security and Net Zero's report 'Impact of growth of data centres on energy consumption' by the Association of Translation Companies.

Introduction

Published in August 2025, the report [Impact of growth of data centres on energy consumption](#), commissioned by the Department for Energy Security and Net Zero and authored by Europe Economics, examines how the growth of digital services, and the data centres that support them, affect energy consumption in the UK.

The report's central premise is that while digitalisation introduces new electricity demand, it can also displace energy-intensive physical activities. The report focuses on three use cases, including **comparing AI-powered translation with human translation**.

The report claims to have selected its use cases based on criteria focusing on, among others, sectors that are clear contributors to the growth of data centres and that have clear physical alternatives allowing direct like-for-like comparisons. Of the three case studies, the report highlights AI translation as offering the most dramatic contrast, reported to be 10,000 times more energy efficient than human translation and, as such, a key candidate for driving net zero goals.

While we welcome scrutiny into the energy footprint of professional translation, not only is the study's fundamental premise deeply flawed, but the methodology it uses risks undermining the Government's credibility within the net zero agenda and seriously compromising future policy decisions.

The study's failures can be summarised as follows:

- The study fails to distinguish, analyse and address the limited impact of professional services with the very rapidly growing load on data centres of non-professional use of AI.
- The study sets a dangerous precedent in portraying critical professional services as archaic professions which can soon be replaced by AI with minimal loss on quality.
- The study presents AI as a simplified, universal, eco-friendly panacea without due consideration for its human-derived cost, or the cost of its increased non-professional use.

Within this response, we will explore these issues in detail, explain the risks associated with basing policy decisions on flawed premises, and propose constructive ways forward.



Why we welcome the scrutiny

As the UK's trade association for companies providing multilingual translation and other language services, the Association of Translation Companies welcomes scrutiny of the industry's carbon footprint and energy efficiency. The language services industry is a complex global ecosystem consisting of organisations who commission and use translation services, served by a supply chain of language service companies and professional linguists all using highly sophisticated modern technologies.

On their journeys towards net zero and more sustainable business practices, our member companies have struggled to quantify the footprint of this complex supply chain and its varied uses of technology from cloud computing and digital workflows to new and emerging AI technologies – primarily because the data on the use of, e.g., AI services is not provided by global service providers.

Understanding the true environmental profile of the language services supply chain is essential to accurately calculate our services' footprint, and we welcome the report's efforts as a first step towards developing models that offer quantifiable methods and greater clarity. Designed well to reflect real-world scenarios, these types of models will enable us to quantify energy usages at different stages of the supply chain, identify where efficiency gains are genuine, and how technology (including AI) can and should be applied responsibly. Transparency ensures that sustainability claims are backed by data, not assumptions, and that human expertise and digital tools are compared on a fair and consistent basis.

By endorsing evidence-based examination of our industry's energy use, we can lead by example, demonstrating that professional translation is committed to measurable, science-based sustainability and to continuous improvement in how we deliver linguistic quality with the lowest possible environmental impact.

A flawed case study comparison

For this report, Europe Economics was commissioned by the Department for Energy Security and Net Zero to examine the impact of data centre growth on overall energy consumption, considering not only the energy required to deliver digital services, but also the energy avoided by no longer delivering those services through physical means.

To achieve this aim, three 'representative' use cases were chosen:

- video streaming versus Blu-ray discs;
- eBook reading (as an example of electronic publishing) versus printed books; and
- AI-powered translation (as an example of an AI application) versus human translation.

Of the three case studies, the report highlights AI translation as offering the most dramatic contrast, with AI translation reported to be 10,000 times more energy efficient than human translation and, as such, a key candidate for driving net zero goals.



Herein lies the most significant flaw within the report; The premise of comparing AI translation to human translation as an example of AI services that are clear contributors to the growth of data centres is fundamentally flawed, and fails to address the core issue of why AI translation represents a significant load on energy usage.

To calculate user base assumptions for shared allocation of energy, the report cites 2018 data on the use of Google Translate, which amply illustrates the scarcity of reliable, up-to-date data on AI usage for translation. Using Google Translate as a starting point for data usage also highlights the fundamental issue within the report; it fails to distinguish, analyse and quantify how significant (or not significant) a proportion from the overall increased and increasing energy load created by 'translation' that professional translation represents – the very premise on which this study claims to be based.

While reliable comparisons do not yet exist, the emergence of readily available AI translation technologies has given rise to significant new usage scenarios for ad hoc, recreational, and non-professional AI translation, and the proportion of professional translation services is likely to only account for a fraction of the overall increase in data usage.

It is this ad hoc, recreational, and non-professional use of AI translation (which largely did not exist before the emergence of off-the-shelf AI tools) that will account for the exponential growth of data centres and their energy consumption, not professional translation.

Simply put, while achieving energy efficiencies in any sector is of course desirable, replacing human professional translation with pure AI translation is highly unlikely to provide significant energy savings at a scale because it is, in fact, the exponentially increased ad hoc, recreational, and non-professional AI translation that is the real contributor to the growth of data centres.

Without further analysis and a quantified distinction between professional translation vs non-professional AI translation use, it is impossible to draw any realistic conclusions based on the current study to inform future policy or the race towards net zero.

Archaic notions of professional services

For this study, Europe Economics developed a new methodology for estimating the total electricity consumption of digital services relative to credible physical alternatives, aiming to compare like-for-like services to determine the potential benefits, and offering a comparison focused on energy consumption across the full delivery chain.

The premise within the study's selection of professional translation as a representative use case is fundamentally flawed and seriously undermines the credibility of the report.

The report paints 'human translation' as an archaic notion of a translator sitting in an office and producing a translation on a computer – with significant care having been taken to calculate the carbon footprint of office work, and even noting the difficulty of including the translator's food within the calculations.

With its simplistic and simplified characterisation of the ‘human translator’ working almost entirely manually, the study completely fails to recognise the real-life practices of professional translators, the complex global language services supply chain, and professionals’ use of sophisticated language technologies, all which impact on the true carbon footprint and energy consumption of producing a professional translation.

These variables, completely unaccounted for in the study, include:

- Most professional translators working as freelancers from home or from co-working hubs rather than offices;
- The majority of professional translators working within a supply chain which includes language service companies; and
- The vast majority of professional translators using varied technologies including translation and terminology tools and neural machine translation engines as part of the translation workflow.

What further compounds the unevenness of the comparison between ‘human translation’ and AI translation is the fact that the report fails to even out the disparity between translation inputs and outputs.

While the report acknowledges that the quality produced by an AI translation is not on a par with human translation, it fails to address the AI output as benefiting from derivative human work, and to include energy costs for the human post-editing needed to make an AI-generated translation to match that of human quality.

What’s more, the report also fails to account for or include in its calculations the originally human-generated data to train an AI model in the first place, which creates an uneven comparison where the AI-generated output seems to spring into being from nowhere.

In portraying ‘human translation’ as an isolated, largely manual process, the report’s detailed energy consumption calculations of the translation process do not result in like-for-like comparisons, do not correspond to real-life scenarios or technology usage, and do not represent typical delivery chains, which renders these calculations largely worthless.

Lacking parity and ignoring the cost of building human-derived AI, the study’s comparison of human-quality translation and AI translation results in a mismatched comparison, which further undermines the report’s credibility.

Why does this matter?

Intended as a landmark study for comparing digital services relative to credible physical alternatives, with an aim to inform future policy and the race towards net zero, this study presents AI services not just as a universal panacea, but one that is infinitely more environmentally friendly compared to current professional services. This creates a false premise for future policy decisions and trivialises the delivery of professional business services.



In pitching professional translation as an example of a clear contributor to the growth of data centres, the study fails to distinguish, analyse, and address the true root cause of AI translation's proliferation – ad hoc, recreational and non-professional use of AI translation – and thus arrives at largely meaningless conclusions.

By choosing translation as an easy example of an old-fashioned profession that can soon be replaced by AI, the study sets a dangerous example of trivialising professional services that underpin the delivery of critical services to the UK's multicultural, multilingual society, and undermines the potential of UK businesses' growth overseas.

AI translation does not have parity with human translation. By manufacturing a use case where AI is being portrayed as a universal, eco-friendly replacement to professional translation services, future policy decisions will be based on flawed assumptions, and the delivery of professional services will be compromised. In the simplest of terms: AI solutions can be hugely helpful companions and suitable for professional translation of some communications, but they cannot be used to replace human professionals universally. This is particularly critical when it comes to the medical and healthcare sector, regulatory and legal documentation, creative, and brand-critical content, among many other similar uses.

When considering the findings of this study within a wider professional services context, the same risks around trivialising the work of a highly skilled profession ring true for other critical sectors beyond translation – from legal to financial, and from healthcare to education.

The report's flawed presentation of AI as a universal eco-friendly solution makes use of hypothetical scenarios which do not correspond to modern professional practices, or acknowledge the true root causes of increased data usage and the growth of data centres.

As a result, the report directs our attention to the wrong place entirely for identifying serious opportunities for energy efficiencies, trivialises the value of professional business services, and compromises the credibility of its findings, increasing the risk of future policy decisions based on flawed premises.

A constructive way forward

While all sectors and industries should work harder to understand their impact on the climate, and to work towards practices that are more sustainable, this work should be based on real-life scenarios and realistic assessments rather than simplified, hypothetical use cases.

The Association of Translation Companies welcomes this study's underlying purpose of creating methodologies and models to quantify the energy load of professional services and to compare it to corresponding AI-driven delivery.

We call for the current report and its findings to be reviewed and revised to rectify the obvious failings and issues we have highlighted in this response, with the involvement of expert language services industry stakeholders.



Quantifying real-life scenarios within a complex supply chain is a challenging task, and reliable data can be very difficult to obtain, as this study has shown.

As we continue on our journey towards net zero with our member companies and organisations such as Climate Action for Associations (CAFA), we welcome the opportunity to work with the Department for Energy Security and Net Zero to explore further how to distinguish and measure the true impact of professional translation versus non-professional AI translation whilst recognising the intrinsic value of professional business services.

About the ATC

The Association of Translation Companies (ATC) is a trade association representing the interests of language service companies in the UK and internationally. It is the leading voice for companies operating in the UK's language services industry.

Founded by British translation companies in 1976, the ATC provides authoritative advice about matters relating to multilingual communication, and working with legislators and other stakeholders, lobbies on behalf of its members, promoting the value of language services and language skills, translation and interpreting. The ATC defines standards of excellence for language service companies by promoting quality-driven language services and best practice to create recognition and trust.

The ATC influences the advancement of language service companies and the language services industry through its research, initiatives and activities, in collaboration with its stakeholders. At the forefront of the development of new international standards for translation and interpreting, the ATC is also the founder of ATC Certification, a certification body providing ISO certification services and training to language service companies worldwide.

The ATC collaborates closely with other language services industry associations and organisations, and is a member of the EUATC, an umbrella organisation of national associations in Europe.