interact.

Analytic software.

Sustainable
IT Starts with

Interact.

Contents

What is Interact?

Interact uses industry knowledge, leading research and extensive reporting to recommend projects and actions designed to improve data centre efficiency and optimise server estate performance, saving you in terms of energy, carbon and cost.
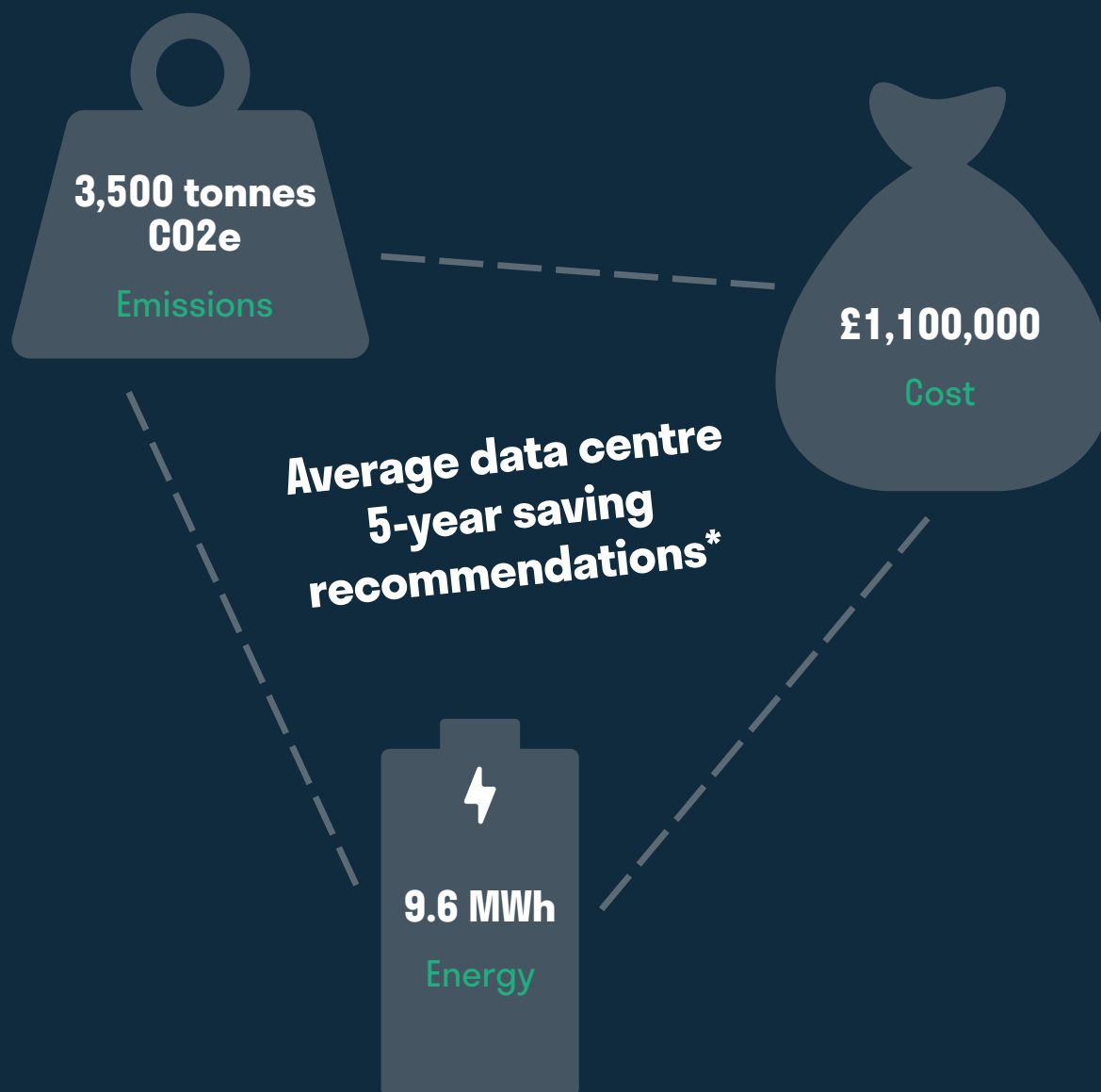
The Interact team has decades of combined experience in the fields of hardware provision and optimal configuration, IT Asset Management, IT Asset Disposition and circular economy, product life extension and the secondary market.

We draw upon this, our world leading benchmark research and our expertise in sustainability reporting and framework management to offer a comprehensive solution that encompasses Scope 2 and Scope 3 carbon reporting, cost reduction and efficiency gains with wrap-around

expertise on hardware configuration, software asset management, sustainability and ESG risk management.

Today, Interact's energy efficiency solutions have been adopted by FTSE100 companies worldwide. We use our award-winning, machine learning tool to deliver insight-driven reports that support operational improvements, hardware performance, sustainability reporting and strategy and cost management to transform your business.

Join the companies using Interact to create data centre savings across the board...

3,500 tonnes CO2e

Emissions

£1,100,000

Cost

Average data centre 5-year saving recommendations*

9.6 MWh

Energy

*Interact has completed analysis on over 300 data centres. Averages are based on 2,000 server estate size.

The Global Challenge of Data Centre Technology

Data centres and server technology are responsible for a large percentage of our planet's energy consumption and subsequent carbon footprint.

- Global internet traffic surged by over 40% in 2020 with 200-250 TWh1 of energy.

- Servers are responsible for 70% of the energy draw of a data centre, on average.

- An average rack server contains over 1,000 kg of embodied carbon (Scope 3).

Historically, there has been no way to measure the impact of server technology and demonstrate improvement on a case-by-case basis...
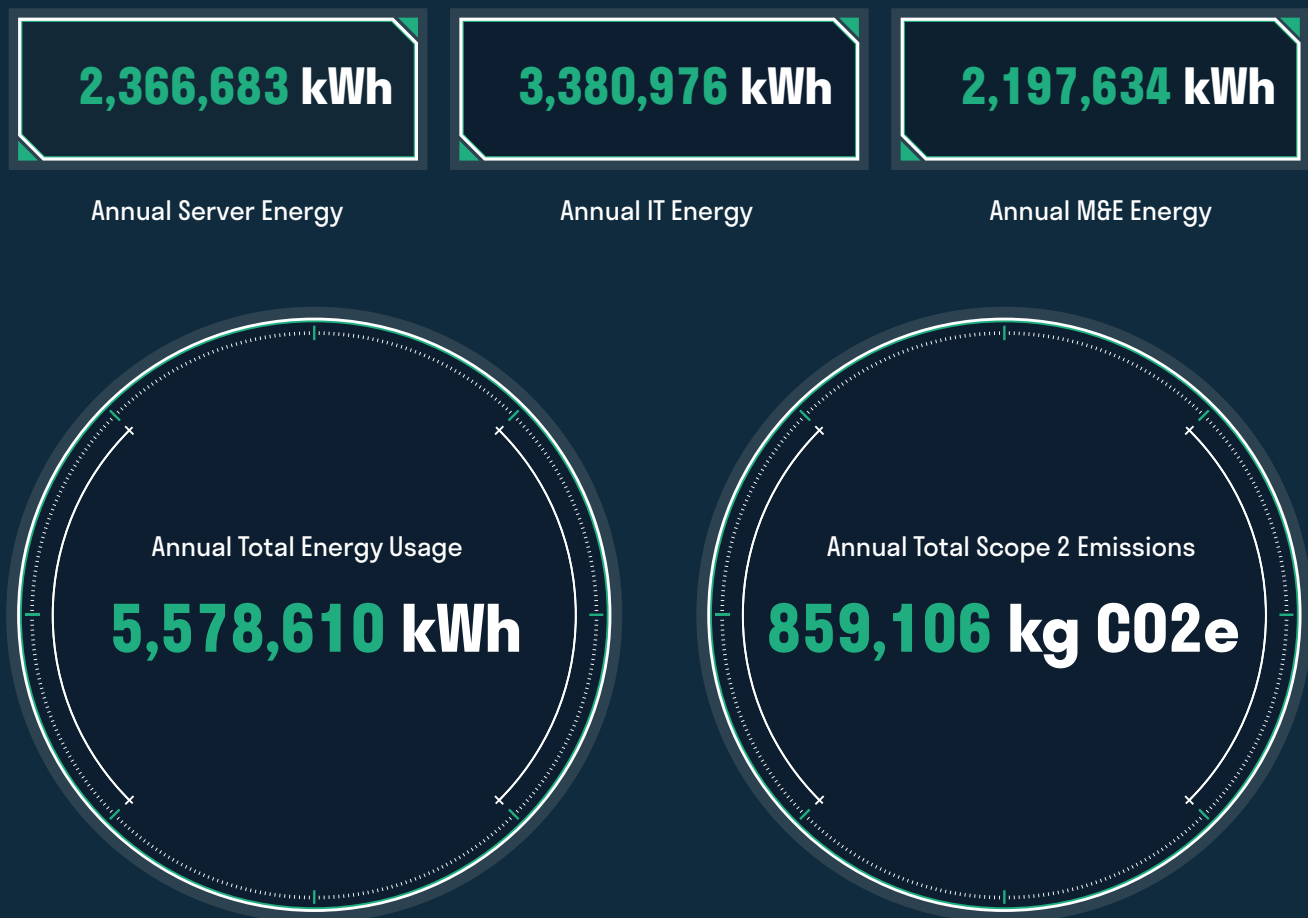
The Interact Solution

Environmental and Energy Reporting for your Server Estate.

Offering environmental and energy reporting to data centres globally, the multiple award-winning Interact tool conducts component and rack level analysis of the server estate. It is the world's first and only solution that allows customers the ability to accurately measure the server energy draw.

Example estate output shown below:

2,366,683 kWh	3,380,976 kWh	2,197,634 kWh
Annual Server Energy	**Annual IT Energy**	**Annual M&E Energy**

Annual Total Energy Usage
5,578,610 kWh

Annual Total Scope 2 Emissions
859,106 kg CO2e

Accurate analysis and reporting of your data centre infrastructure, Interact's main features include:

Energy calculations

Total operational energy is calculated based on a number of factors including existing server models, utilisation rates, networking/storage proportions of IT energy, and PUE (if mechanical and electrical equipment details are not available).

Energy efficiency

Server energy efficiency is based on Machine Learning models trained with the entire SPECpower result set plus thousands of hours of additional benchmarking. Performance is measured in SSJ_ops (Server Side JavaScript operations per second), which is an ideal measurement for defined transactional operations.

Scope 2 Carbon Footprint

Use-phase carbon is estimated for each site depending on the latest CO_2 emission intensity of the country and region where it is located.

Server Performance and Benchmarking

The Interact tool intelligently measures the performance of your server estate, identifying the worst performing devices in terms of energy consumption compared with compute output. It then calculates the optimum hardware replacements to deliver the same compute power with lower energy usage, cost and carbon emissions.

Lowest Performing Server

6,267

Highest Performing Server

25,891

Decommissioning and replacement opportunities

Efficiency scores for each server configuration in the estate are included in the report. This provides you with the ability to identify the worst performers and the configurations having the highest impact on carbon and electricity.

Data Centre Optimisation and Hardware Upgrades

Interact calculates the optimum server hardware replacements, from all of the major OEMs, to deliver the same compute power with lower energy usage, cost and carbon emissions than your current server estate.

With vendor neutral new and refurbished / remanufactured solutions available, thanks to Interact, the sector now has scientific answers to the problems of economic, energy and materials waste.

Based on scientific equations, peer-reviewed and published in an IEEE paper, the Interact tool is capable of delivering reliable information across all makes and models of servers in every geographical region.

With an intuitive interface that allows users to easily manage their reports, get instant recommendations and record progress over time, this non-intrusive tool offers authorised users access to individual accounts through an encrypted portal.

Refresh recommendations
Over 1000+ models & configurations are analysed to provide data centres with the optimal servers tailored to their infrastructure and workload needs.

Potential energy savings, cost savings, Scope 2 and Scope 3 carbon emission savings are all reported to facilitate the decision making process.

Consolidation/Capacity Planning
Refresh scenarios often result in considerable ability to reduce estate size. On average we see possible reductions of around 60-75%.

Consolidation of hardware extends beyond the hardware saving. It also involves potential resale of unused, surplus software licensing, recovery of value on the server estate as well as space savings and reduction in maintenance costs.

Buy back quotes
When instructed, server buy back quotes will be quoted by a leading decommissioning team and the resell value will be included in the refresh scenarios.

ROI/TCO Analysis

Operational cost forecasts can be presented for anywhere from 1-10 year assessment periods. Electricity, maintenance, repair, licensing and space/rack costs can all be factored into the calculations.

Scope 3 Carbon Footprint

Interact provides accurate market information on the embodied carbon in the server estate using multiple data sources. Ability to reconfigure existing servers and include refurbished components can also be included.

Interact has delivered some powerful results so far…

Average 75% energy reductions

Average 75% CO2e emissions reductions

Average 80% operating costs reductions

Average 80% space saving

Interact is Backed by Industry-leading Research

We have an industry-leading team of specialists at Interact. This enables us to use our award-winning tool to deliver never-seen-before recommendations alongside consultancy and advice that supports operational improvements, hardware performance, sustainability reporting and strategy and cost management. This is backed up by ongoing benchmark research and in-house sustainability expertise. Our team, more than any other in the world, understands the effects of server build and operational considerations on hardware performance.

Research

The Interact tool is based on the findings of a pioneering research project published in the IEEE journal Transactions on Sustainable Computing that showed refurbished servers can be as reliable and efficient as new. We continue to build on this heritage with ongoing benchmark analysis on the effect of environment on server performance at our dedicated testing facility. Our ongoing work provides exclusive analysis of the effect of component level upgrades, temperature and operating systems.
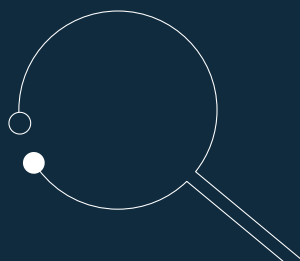
Knowledge

The Interact team has decades of combined experience in the fields of hardware provision and correct configuration, IT Asset Management, IT Asset Disposition, product life extension and the secondary market. We draw upon this and our expertise in sustainability reporting and framework management to deliver the following services in-house and with partner organisations:

- Hardware Consolidation
- Cloud Migration
- Server Analysis
- Scope 2 and Scope 3 Carbon Reporting
- ITAD and Decommissioning

Training

Members of the team have delivered training on product life extension, lifecycle analysis and costing and information security to organisations large and small across Europe. We also provide IEMA accredited sustainability training from beginner up to board level.
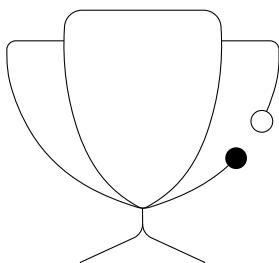
Awards and Recognitions

Awards

Interact is a multiple award-winning company, recognised in the data centre industry for our innovative approach towards data centre analysis and performance optimisation.

In our first year, Interact and its team members have been recognised at over a dozen national and international awards.

These include:

- ESG Technology Award at The National Technology Awards 2022

- Data Centre Efficiency Project of the Year at Data Centre Solutions Awards

- Innovation and Entrepreneurship Award at UK IT Awards

- Silver for Tech Start-up of the Year (Software) at the International Business Awards

- Silver for IT Project of the Year at the 16th IT World Awards

Pending B Corp

Interact has always been about low impact on the environment, big impact on the bottom line.

Becoming a Pending B Corp in 2022 was a natural step for a business that wants to be a 'force for good'.

The B Corp rigorous on-going review process is one of the best metrics available for measuring our sustainability performance and identifying areas for improvement.

3 stars for Global Goals

Interact has been awarded 3 stars for its support for the UN Sustainable Development Goals. The Global Goals are 17 pledges for a better, more sustainable world, something that aligns with our vision.

We have set targets against the two Global Goals that most resonated with our leadership team:

- **Goal 12**
  Responsible Consumption and Production
- **Goal 5**
  Gender Equality

FAQs

What cost analysis does Interact offer that has not been available before?

Decision makers have previously never been able to capture the cost of transformation projects, which means they have not been able to build a body of information to inform better decision making over time. Because Interact is non-invasive, it enables analysis of historical migration or consolidation.

This information can be compared to other hypothetical options to carry out long-term understanding of the cost of transformation within complex organisations and which options work best long term.

Does Interact cover the entire data centre hardware estate?

Interact is a server analysis tool born of front-line research and analysis of multiple makes and models of servers. Interact does not cover networking switches or storage because the data sets do not exist to the same level of accuracy as SPECpower provides for servers.

We have chosen to provide reliable, accurate analysis of the server estate, which represents the majority of the energy draw (estimated to be 70% of the overall IT energy draw), rather than dilute effectiveness with less reliable information on networking and storage. In addition, the higher refresh rate on servers compared to switches and networking make these the best opportunity for increased efficiency gains over time.

Does Interact Cover Virtual Machines?

Interact analysis is based on reliable market data sets on bare-metal servers and their configurations. We know from our research that the energy draw of virtualisation depends on a number of factors including the number of virtual machines and the type of workload operating. Measuring energy draw on bare metal is more accurate and will tell you which models and configurations do better as a baseline for the virtual estate to run on. This allows you to then make the best decision on how to virtualise your estate.

What if servers are tied to a particular application that can't be replaced?

We are aware that some critical applications are run on legacy servers and cannot easily be replaced by another model. This is where the Interact component level analysis upgrades can still be carried out, which will reduce energy usage overall. Interact is the only tool that holds historical data going back through the server generations, putting us in the unique position of being able to offer efficiency gains on older servers as well as new.

Can Interact help with procurement and cost realisation on existing equipment?

Interact is a software provider that is specialised in providing vendor neutral analysis. However, our consultants have strong understanding of the resale market. We can offer objective, non-specific advice in how to buy equipment, components and IT Asset Disposition services from a variety of outlets. If you need more information on this, please ask one of our consultants.

What is the ongoing research at Interact?

- Embodied carbon through CEDaCI (Interreg funded West European Research project)

- Effect of environmental conditions (temperature and pressure) on server energy efficiency

- Effect of BIOS power modes on server energy efficiency

- Effect of memory configuration on server energy efficiency

- Effect of virtualisation on server energy efficiency

interact.

If you would like to understand more about what Interact can do for your organisation, please get in touch:

– **interactdc.com**
– **contact@interactdc.com**