

Thermal Energy Resource Modelling and Optimisation System (THERMOS)

Pricing Document

G-Cloud 15

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1 Who we are

The Centre for Sustainable Energy (CSE) is an independent national charity, founded in 1979, dedicated to tackling climate change and ending the misery of cold homes. We combine hands-on support for households and communities with rigorous research and analysis that shapes local and national energy policy.

Our Research team has deep expertise in data modelling and the development of web-based analytical tools. We have created major national resources including the London Heat Map, the National Housing Model, the Heat Network National Zoning Model, the Impact Community Carbon Calculator, and THERMOS. THERMOS is our flagship service, the algorithms of which underpinned the National Zoning Model commissioned by DESNZ to identify viable heat-network zones across the UK.

2 What is Thermal Energy Resource Modelling and Optimisation System (THERMOS)

Almost five years in development, THERMOS is revolutionising the way opportunities for low-carbon district heating networks are identified and evaluated worldwide. It takes the hard work out of identifying which buildings to connect and how to connect them, among the thousands of options available.

Put simply THERMOS delivers planning analysis that other solutions simply cannot.

Rapid results

- THERMOS identifies place-based, user specific optimal network solutions for any given area within minutes.
- It significantly reduces rework in the planning stages, through delivering accurate results first time. It enables you to easily and quickly iterate planning options over and over again.

Rigorous and credible analysis

- THERMOS offers precise high-resolution address-level mapping and built-in energy demand estimations, to deliver rigorous and accurate results, that reduce implementation errors and saves time.
- It also provides flexibility with data input, allowing user-specified local data to be uploaded to further increase accuracy of results.
- Solutions are defined according to the user's chosen criteria and the specified energy planning challenge.

Cost-effective solution

- Free up your valuable resources to do higher value evaluation work while THERMOS does the tedious data processing and planning tasks at far lower cost.
- THERMOS identifies the most profitable or least-cost way of providing thermal energy to a set of buildings or area.

Replicable and scalable

- Automated standardised data sets are used across different problems in an integrated workflow.
- This delivers replicable, adjustable, and comparable results, that can be scaled across one or multiple projects with ease.

Easy-to-use, accessible and shareable

- All stages of THERMOS analysis are provided in a single web-based application, facilitating openness and collaboration between consultants, technicians, their clients, and other stakeholders in real-time. Results are simple, flexible and shareable.
- Easy-to-use for all levels of planning experience.

THERMOS subscription cost

Below are the typical annual subscription costs.

Annual fee	Type of Subscription		
	Trail Version	Single Named Academic Account	Unlimited Local Authority Account
	Free	Free	£2,000
Maximum number of optimisations run in a 7-day period (across all projects).	10	Unlimited	Unlimited
Maximum number of roads and buildings uploaded (across all projects).	8,000	Unlimited	Unlimited
Maximum run-time for any single network or supply optimisation.	1 hour	Unlimited	Unlimited

Optimisations are prioritised and executed at the earliest available opportunity.	No	Yes	Yes
Dedicated server	No	No	No
Number of registered users per account (i.e. email addresses)	1	1	Unlimited

3 Services included in the unlimited THERMOS subscription cost

The following services are included in the annual subscription fee.

- Full onboarding process including:
 - Set up and hosting of a secure named user account to use THERMOS, with the option to renew annually.
 - Access to all online training materials.
- Continuous maintenance and monitoring of the service, to include but not limited to:
 - Monitor and apply security patches to maintain Cyber Essentials security certification.
- Unlimited access to THERMOS to design heat networks:
 - Create unlimited number of projects.
 - Unlimited optimisations.
 - Optimisations are prioritised and executed at the earliest available opportunity.
 - Ability to share projects between named users.
- Dedicated Technical Account Manager responsible for:
 - Email technical support service from Monday to Friday during normal business hours.
 - Alerting users to any planned or unplanned service outages.
 - Running the THERMOS Steering group and inviting users to actively influence the road map.
 - Management account subscription.
- Full contract termination service
 - Deactivation of accounts.
 - Secure removal and deletion of customer data. Customers are responsible for extracting data they wish to keep before the contract is terminated. CSE can provide this service for an additional cost.

4 Additional services

Tailored, task driven THERMOS training

To help users fully realise the value of their investment in THERMOS, CSE proposes a comprehensive, practical training package designed to equip your team with the skills and confidence to use THERMOS to its full potential.

We believe training is most effective when it's relevant, and task driven. That's why we recommend co-developing the course content in close partnership with users. This ensures every session is aligned with your goals and day-to-day challenges. This might include incorporation of real-world heat network opportunity areas, either directly from the National Zoning Model or third-party consultant. This approach not only enhances relevance, but also allows participants to engage with familiar data, making the learning experience more impactful and immediately applicable.

A typical training package for new THERMOS users would include:

- Introduction to THERMOS core features and capabilities.
- Project creation & collaboration: best practices for building and sharing projects.
- Network design & optimisation: step-by-step guidance on mapping and refining energy systems.
- Scenario analysis: using THERMOS to explore and compare different planning options.
- Real-world application: hands-on exercises using relevant data.
- Model limitations: learn how to recognise the boundaries of the THERMOS model and apply best practices within those constraints.
- Effective troubleshooting: explore common issues and their root causes, supported by real-world examples and proven mitigation strategies to ensure smooth and confident use of the software.

We are happy to work with you to design a course that matches your budget.

Technical consultancy using THERMOS

As new users of THERMOS, it's natural to have questions or seek guidance. To ensure users get the most from their investment, we can provide a dedicated technical consultancy package, designed to provide timely, expert assistance when needed.

This support includes access to a THERMOS specialist via a dedicated email channel, where your team can ask general "how-to" questions and receive clear, actionable advice to reinforce their learning.

For more complex or project-specific challenges, ad-hoc one-to-one support sessions, featuring live screen sharing and tailored guidance can be arranged. These sessions are ideal for resolving unique issues and accelerating progress on real projects.

Costs for this service are determined by scope and the number of deliverables. Detailed costing is available on request.

Heat decarbonisation planning

We understand how important yet challenging, decarbonising heat in buildings is in support of net zero objectives. We are experts and innovators in this sector with extensive experience of working with the government, local authorities and countries across Europe.

We offer advanced analysis and modelling to support local decarbonisation planning, including heat network zoning and prefeasibility studies. Our robust and transparent methodologies ensure reliable technical support while promoting a broader understanding of the data. We also provide honest and impartial advice on leveraging available modelling tools to develop strong policies and drive the necessary changes effectively.

We deeply understand the importance of implementation of these changes and policies across communities (both for heat pump adoption and heat network deployment), which often brings challenges and complexities. We work with local authorities, building owners and residents to understand key challenges and develop robust recommendations to policy and decision makers to address them.

Below are some examples of the type of assistance we can provide.

- Undertake a renewable energy capacity analysis, identifying the potential for solar, wind, and other low-carbon energy technologies in the district, and liaise with stakeholders to contribute to a Local Area Energy Plan (LAEP).
- Create a robust heat demand map using THERMOS to estimate the heat demand at building level. This will indicate areas of highest demand allowing for better planning and understanding.
- Identify heat supply opportunities through analysis of large waste heat sources and assessment of potential ground source and water source heat pump arrays.
- Evidence-based recommendations to improve renewable and low-carbon energy generation policy ready for inclusion in a council's local plan.

We would welcome the opportunity to discuss your requirements in more detail before providing costs.

5 Notes on costings:

General notes

- VAT will be charged at the prevailing rate (currently 20%) and is subject to our standard terms and conditions.
- Payment is payable within 30 days of receipt of invoice.

Annual subscription

- Payment to be made in full once the Service Level Agreement (SLA) is signed.
- The first day of the subscription will be the day the users are issued with their login details.
- Unlimited local authority accounts assumes that all individual registered user accounts are created using email addresses belonging to the local authority organisational domain(s).
- Accounts registered using external or non-organisational email addresses that are associated with a local authority account may be suspended or removed at CSE's discretion.
- Login details must not be shared or used by anybody else, either inside or outside your organisation.

Additional services

- Additional functionality requests will be considered by the THERMOS steering group and if approved included in the planned roadmap. Delivery of functionality ahead of the roadmap is chargeable and will be costed based on our standard date rates. A quote can be provided on request.
- Additional services, such as training and full data extraction are chargeable and will be costed based on our standard date rates. A quote can be provided for these on request.
- Days purchased for THERMOS technical consultancy or training cannot be used for software development to commissions enhancements to THERMOS.
- Days purchased for THERMOS technical consultancy or training cannot be used to fund additional named user unlimited THERMOS accounts.
- Technical consultancy and training services will be delivered within the 12 months of the THERMOS subscription. All services will expire when the THERMOS subscription expires. Any remaining time will be forfeited and not refunded.

Training

- Costs assume that any purchased training will be delivered online via video call to a maximum of six attendees at each session. CSE reserves the right to charge for any reasonable expenses, if there is a requirement for on-site face-to-face training. Additional charges may include, but not be limited to, travel and subsistence, hiring a training venue, refreshments and hiring equipment required for the delivery of the session (e.g. laptop, digital projector and flipchart).
- CSE can grant temporary unlimited THERMOS trainee accounts to training attendees, to allow additional users to take part in the training course.
- CSE requires minimum notice of two weeks to cancel a training course. If a course is cancelled within two weeks of the scheduled date, CSE will charge 50% of the cost. Courses may however be rescheduled to an alternative date without incurring charges from CSE.