

SCHEDULE A
SPECIFICATION

SCHEDULE A. SPECIFICATION

Overview

Smart Heating systems incorporate control and communications technology with energy-saving heating systems to reduce costs and carbon emissions associated with heating. Solutions primarily involve the installation of high-efficiency heaters that are connected, via a building's electrical circuit and/or wirelessly to each other and to external analytics and control centres enabling monitoring and control of energy usage, system status reporting and software updates. The system will be scalable, with units working individually and together to create a coherent platform for managing buildings to drive efficiencies across estates. The system should require zero maintenance input from the end-user and approach as close as possible a "heating as a service" model.

Smart Heating systems **must** be supplied by a single vendor that owns the intellectual property for the installed software, for the purposes of quick and efficient updates.

At a high-level, the successful supplier will provide:

System scalability

- A robust, scalable, network-enabled heating system that allows multiple heaters to act as one to heat a large area effectively and efficiently.
- The ability to link an unlimited number of heaters in a single network.
- The ability to link across multi-site, large scale estates.
- The ability to manage multiple networked heaters with a single control unit.
- Simple, non-intrusive installation, including the ability to retrofit, with minimum disruption to end-users.
- The manufacturing capability to meet demand.
- The ability to integrate the Smart Heating System with existing building management systems, where required by the end user.
- The ability to integrate the Smart Heating System with existing building hardware, where required by the end user.

System control

- A user friendly, simple and clean single source access portal which presents information from all heaters and applications.
- The ability to control the heat in 'zones' within a building

- The ability to identify and configure zones or heaters from the control unit and to easily identify individual heaters within the premises
- The ability to provide real time information on ambient conditions, panel surface temperatures and heater settings enabling fine control of heating.
- The ability to control the system to a range of criteria such as budget, carbon or kWh.
- Heaters that are fully & remotely configurable.
- Ability for the end-user to control the system via mobile applications
- Low bandwidth wireless transmission.

Energy-saving features

- High-efficiency heaters.
- Technology that minimises energy consumption while ensuring end-user comfort levels are maintained.
- Ability to detect temperature levels and motion.
- Ability to provide targeted heating according to demand, area usage and traffic levels.
- Ability to modify heating systems in real time, according to ambient conditions.
- The ability to detect and react in real time to environment changes (e.g. to reduce or stop heat output when a window or door has been left open).
- Ability to detect and enable reduction of hot and cold spots.
- Data analytics software.
- Energy control software.
- Ability to integrate with an end-user's existing low-carbon energy sources (e.g. installed solar PV, battery or wind-power generation).

System robustness

- System-wide resilience to individual component failure - if one heater fails, it should not impact others in the system.
- Fail-safe capability such that failure of an individual component or of data transmission does not pose a risk of harm to persons or to property.

- 100% uptime availability.
- Minimal hardware and software maintenance requirement.
- Zero user maintenance.
- System monitoring that allows remote monitoring by the provider to detect any faults or issues, with remote rectification of faults, where possible, undertaken by the provider.
- Fire and frost protection built into system
- A system that is hardened and protected from hacking by botnet or other online threats when installed at an end user's site.
- Secure wireless and/or wired networking.
- Data transmission that has zero or minimal impact on an end user's currently installed communications networks.
- Data transmission that is able to work reliably despite encountering interference.
- Servers and systems used by the Supplier for remote monitoring, back-up, analysis and support that are hardened and protected from hacking by botnet or other online threats.
- Strict separation between the smart heating communications network and any existing end-user communications networks.
- Secure data analytics.

Back-up & support

- Software and hardware maintenance services.
- Installation services.
- Technical support services.
- Provision of hardware as a service.
- Provision of software as a service.
- A flexible hardware and software upgrade pipeline.
- Remote software updates with zero or minimal impact on an end user's ongoing heating provision.
- Comprehensive hardware and software warranties.

Standards

All products supplied under the Framework Agreement must be CE certified under the relevant directive.

The Supplier must operate a defined quality management system for the design, development, manufacture, service, installation and distribution of its Smart Heating systems to the standard of EN ISO 9001:2008 or operate a system to an equivalent level. Details of this quality management system will be made available to NHS Organisations on request.

The Supplier must operate a defined quality management system for its servicing and technical support services. Details of this quality management system will be made available to NHS Organisations on request.

The Supplier must follow a Software Quality accreditation process – such as IS EN ISO 9001:2008 or equivalent.