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HYBRID HEATING SYSTEMS: BRIDGING THE FUNDING GAP IN THE PUBLIC SECTOR

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THE PUBLIC SECTOR DECARBONISATION SCHEME PROVIDES FUNDING FOR PUBLIC BUILDINGS TO TRANSITION TO DECARBONISED HEATING SYSTEMS TO REDUCE OVERALL EMISSIONS IN THE PUBLIC SECTOR. BUT FOR UNSUCCESSFUL APPLICANTS, OF WHICH THERE ARE MANY, IS THIS THE END OF THEIR DECARBONISED ROAD? WITHOUT FUNDING, THEY ARE UNLIKELY TO BE ABLE TO AFFORD TO IMPLEMENT A TRULY DECARBONISED HEATING SOLUTION.

In such a scenario, a compromise can be achieved that makes considerable steps towards decarbonised heating, but with a more affordable price tag: the hybrid heating system.

The government estimates that direct emissions from public sector buildings account for around 2% of the UK's total emissions. The main source of emissions in these buildings is natural gas for heating purposes. Transitioning to decarbonised heating systems is therefore fundamentally important in reducing overall emissions in the public sector. Decarbonising heating has been primarily focussed on the replacement of natural gas boilers with heat pumps which are up to a third more efficient than gas boilers, so require less energy to run.

PUBLIC SECTOR DECARBONISATION SCHEME

The Public Sector Decarbonisation Scheme (PSDS) supports the aim of reducing emissions from public sector buildings by 75% by 2037, compared to a 2017 baseline. It is open to public sector bodies in England as well as those with reserved functions operating in the devolved administrations across the UK. £2.5 billion in grant funding was allocated for Phases 1-3, covering 2020 – 2026, with Phase 2 seeing a stronger focus on heat decarbonisation than Phase 1. In September 2024, the new government confirmed the continuation of the PSDS and Phase 4 of the scheme opened for applications in October 2024 with a £1.17 billion budget to run from 2025-2028.

Similar schemes operate in Wales and Scotland. The Wales Funding Programme provides loan funding for energy efficiency and decarbonisation projects for public sector bodies registered in Wales. Scotland's Public Sector Heat Decarbonisation Fund is closed at the time of writing, but it is hoped that the application process will open shortly for projects starting in 2025/26.

UNSUCCESSFUL APPLICANTS: THE END OF THE *DECARBONISED* ROAD?

The PSDS is a much needed fund for decarbonising the public sector, but even with the seemingly large sums available, many PSDS applicants will fail in their bid to get funding. Does this represent the end of the road for their decarbonised heating plans? Without funding, these public bodies are unlikely to be able to afford to implement a truly decarbonised heating solution based on renewables and heat pumps. Even if their existing gas powered heating systems are past their working lives and must be replaced, if budgets are limited, they are likely to be forced into replacing one fossil burning fuel system with another, albeit a modern more energy efficient one.

Why? Because the capital cost of heat pumps is more than comparable gas boilers and, despite their efficiency, running costs are not low due to the price of electricity compared to gas in this country. On the plus side, heat pumps have a long lifespan and have minimal moving parts that need to be replaced or maintained. However, these costs remain a real stumbling block for many.

ECOMOD COMMERCIAL HEAT PUMPS

INSTALL COMMERCIAL HEAT PUMPS ALONGSIDE COMMERCIAL CONDENSING BOILERS TO CREATE A LOW CARBON HYBRID HEATING SYSTEM

In such a scenario, a compromise can be achieved that makes considerable steps towards decarbonised heating, but with a more affordable price tag: the hybrid heating system.

HYBRID HEATING SYSTEMS EXPLAINED

A hybrid system essentially has heat pumps as the primary heating system, with gas boilers as the 'top up' at times when there is high demand or external temperatures are particularly low.

Cascading wall hung commercial condensing boilers, such as our Evomax 2 or the floor standing Imax Xtra 2, are ideal for a hybrid system as a higher modulation ratio is achieved, so gas usage is far more efficient.

With a large single boiler, it would cycle on and off, using considerably more fuel than strictly necessary.

This hybrid approach is receiving a lot of interest from customers and is one of the reasons we designed our ECOMOD heat pumps with the capability to be installed alongside other Ideal Heating solutions.

When it comes to system design and installation, the same principles are followed as with a standard commercial heating system and the boilers and heat pumps have all the connectivity required to interface with the building management system on site that will need to be programmed to allow for the switch between the systems.

HYBRID HEATING SYSTEMS: THE BENEFITS

Hybrid heating systems help bridge the gap between reliance on fossil fuel burning boilers and low carbon heat pumps. It enables public sector bodies who have not been successful with their PSDS funding bid to move towards decarbonisation without the high capital cost. Of course, this also makes hybrid systems suitable for privately owned buildings where cost is a big factor too.

On top of this, meeting the heat load of an older, poorly insulated property can be expensive from a heat pump alone, typically due to the size and fabric of the building. Even in these properties where retrofitting insulation and improving the air tightness of a building is possible, the cost of doing so may be prohibitive. A hybrid heating system provides more affordable running costs and ensures the properties are heated adequately.

HYBRID HEATING IN ACTION

As part of its sustainability strategy that embraces responsible energy management, Tinsley Meadows Primary School in Sheffield has taken this hybrid approach. They have installed two Ideal Heating Commercial ECOMOD 14kW air source heat pumps running in a hydraulic cascade. These have been installed alongside two wall hung Evomax 2 40kW commercial condensing boilers, for a low carbon hybrid heating system, offering lower running costs and comfort all year round.

Chris Snowden, Technical Operations Manager at Service 2 that installed the system, explains the hybrid approach taken at Tinsley Meadows: "*the ECOMOD heat pumps have been designed to be the main heating source, backed up by the new gas boilers at times of heavy demand. It means the school always has sufficient heating without relying solely on gas.*"

CONCLUSION

The PSDS is an excellent scheme but as with seemingly everything in the public sector, there's simply not enough money to go around and many organisations will be left disappointed when the results of Phase 4 are announced. But decarbonisation aspirations don't have to end there. By adopting a hybrid heating system approach, public sector bodies can bridge the gap between fossil fuel and decarbonised heating systems without the hefty price tag of the latter.

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