Application in response to the tender for Alternative Delegate and Task Coordinator – Lot 2 Solar Heating and Cooling

[REDACTED]

Technical experience

Understanding of the sector in the UK and internationally

I have 40 years' experience in the Building Services sector, with 30 of those spent in teaching, research and consultancy. [REDACTED]

[REDACTED]

[REDACTED]

iverting excess solar PV towards heating is relatively inexpensive and easy to control, but this now has to compete with electricity storage systems that can interact with high value electricity markets. The contexts for applications, and opportunities for deployment of solar PV heat (and PV plus thermal options) need to be better understood if commercial potential is to be realised.

These examples show how heat generated from solar sources has struggled to compete against other low carbon heating technologies such as heat pumps and biomass. Intermittency of solar leads to challenges of load matching and the need for storage. Solar thermal also competes for rooftop space with solar PV, which has higher value yields and has seen recent dramatic declines in capital costs. However, solar thermal has the advantage of significantly higher collection efficiencies than PV, and can be applied to different temperature grade requirements (high temperature processes, domestic hot water, or space

heating). Thermal collector technologies range from the very simple (flat plates) to the sophisticated (evacuated tubes), and have the potential for much lower end-of-life decommissioning and disposal impacts. There is considerable scope for innovations in lower cost materials and manufacturing processes to bring down costs.

Solar thermal systems require forms of storage which adds to cost and space requirements. While this is true of biomass and heat pump systems these are normally to provide buffering for reducing cycling rates, whereas solar thermal often requires longer term storage to deliver load matching. There are significant research programmes looking at longer term, low cost thermal storage such as phase change and thermos-chemical storage. Phase change systems are commercially available (for example Sunamp Ltd), and this may help to open market and technology solutions for a greater range of applications.

[REDACTED]

[REDACTED]

Developing research tasks and leading working groups

[REDACTED]

[REDACTED] This variety of work has provided me with a good holistic understanding of how innovation sits with market and policy pressures, and can respond when favourable conditions exist.

[REDACTED]

[REDACTED]

[REDACTED]

All of these activities have given me extensive exposure to political and industry decision makers at ministerial and CEO levels. I am comfortable operating at all levels, and across multiple disciplines.[REDACTED]

Links with community in the technology area

Most of my research and consultancy has been conducted in association with either industry or policy makers. [REDACTED] This focus has allowed me to interact with a very large number of actors in the field of low carbon technologies in the built environment.

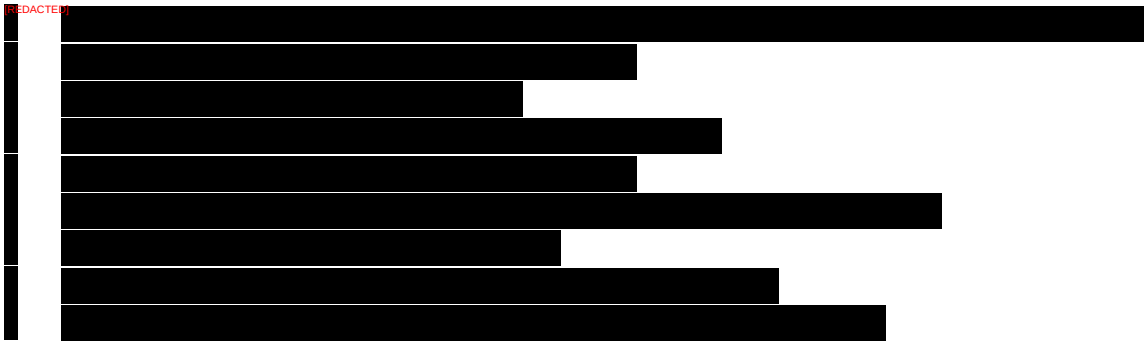
[REDACTED] This work brings me into regular contact with consultants, contractors, academics and decision makers.

[REDACTED]

[REDACTED]

[redacted]

[REDACTED]



Knowledge transfer plan

[REDACTED]. There is always interest within this sector in new technologies and innovations that can assist with the net zero carbon journey.

[REDACTED]

[REDACTED] I would be able to re-engage with these teams to explore interest in joining a national team of experts.

Service delivery

[REDACTED]

Given these commitments I am able to manage my workload to ensure it fits around my longer term commitments. Longer term contracts always take priority over short term opportunities.

If I were successful for this position I would liaise with the DESNZ Delegate to agree a plan of work for the year ahead. This would include expected frequency of meetings (both virtual and face to face), travel plans for international meetings, and the timings and expectations of deliverables (e.g. reports, network building activities, research opportunities etc). The majority of meetings is expected to be virtual, which would enable higher frequency updates and planning activities.

As Task Lead the first set of actions would be to acquaint myself with the current actors within the task and set up a series of one-to-one meetings to familiarise myself with the overall task objectives, together with the roles of each individual, and what they hope to achieve through participation in the Task. I would use this to build a picture of what additional involvement should be included in the Task activities including dissemination through academic and professional networks, relevant conferences and publications and further research activities that might be developed. The overall aim would be to ensure the UK brings significant added value to the Task.