

techUK Data Centres Group

IETF: Industrial Energy Transformation Fund

Consultation Response

November 2019

We are grateful to be given a second opportunity to submit our views to this consultation. In truth the proposals have led to a lot of head scratching for us, because the data centre sector sits awkwardly against the scope of the fund. In our informal comments at the pre-consultation stage, we set out the main opportunities for energy efficiency and avoided emissions within the sector. These relate to upgrading IT hardware and consolidating distributed IT and in repositioning the sector as prosumer in the energy market, all of which are clearly outside the target area of the IETF.

We have therefore reflected on other opportunities for energy efficiency within the sector (of which there are many) and whether the application of funding could deliver a step-change in efficiency and/or reduce emissions that would not otherwise be achieved by market forces alone. The truth is that there is a plethora of potential candidates, but it is difficult to assess whether specific projects, applications and technologies are eligible.

We have divided our response into five sections:

1. Answers to specific questions
2. Generic points on the proposals
3. Questions about the proposals
4. Explanatory points about data centres
5. Next steps

Our views could, however, be summed up as follows: Firstly we suggest that the scope is kept as wide as possible so that potentially game-changing technologies and projects are not ruled out.

Secondly we feel that there are major opportunities to stimulate energy savings within the sector but the operational complexity and the sheer number of energy saving technologies and projects in development make it very tricky for us to establish what might or might not fit within the scope of the proposals. In truth, we are also really struggling to understand the proposals. With this latter point in mind, we would welcome a discussion between members of the BEIS team, technical and operational data centre staff and energy efficiency solution providers to demystify some of the more technical areas of the consultation, narrow down the areas of most relevance and identify potential projects. We could organise, host and moderate that discussion.

1 Answers to specific questions

- ETL: no we don't think that technologies should be limited to the ETL, which is not up to date and although technologies listed are tried and tested they are not necessarily the best approaches.
- Sharing knowledge through IETF: we think industry associations can help by sharing knowledge via case studies. We would be happy to produce case studies and learning

outcomes from any successful projects relevant to our sector, and/or to disseminate case studies from other sectors that might be applicable to data centres.

- Eligibility: We believe eligibility should be expanded outside manufacturing sectors. We believe that other sectors should be eligible and that projects should be evaluated on their energy saving potential and not on the NACE code of the sector. Why limit the field at the start of the process?
- Deep decarbonisation: we agree with the kind of activities but would suggest scope is kept as wide as possible to accommodate technologies that are emerging or that haven't been considered but would still be valid.

2 Generic points on the proposals

- Scope: As a priority we would ask that the scheme is not over prescriptive: if there are clear exclusions (such as energy generation) then please state them but the scheme should not be defined around specific criteria (such as the ETL). Energy efficiency in data centres is complex and there are multiple solutions on the market, some of which may be transformational. Things are evolving quickly and it seems sensible to us to keep as many doors open as possible: the process outlined in the consultation provides a control mechanism to ensure that only the best are selected, so we would suggest keeping the business end of the funnel as wide open as is practical. You can afford to spread the net wide because Government retains ultimate control over what gets through.
- Timescales: some of the technologies, such as fuel cells, that are currently close to being market ready, are at least a decade away from widespread deployment. The scheme talks about solutions that would not otherwise be deployed but not about timeframes: accelerating the deployment of a solution would also be worthwhile. Timing is a key factor in tackling global emissions.

3 Questions

- NACE codes: We are unsure why energy efficiency projects are limited to manufacturing sectors. Why limit the scope of entrants when the scheme provides the opportunity to select the best candidates?
- Cooling: Why is cooling excluded? Cooling accounts for up to 30% of energy costs in data centres, especially legacy (older) facilities. Cooling technology is one of the fastest developing technology areas and there are solutions that might be suitable for this programme, so why rule them out at the start?

4 Data Centre characteristics

- SIC/NACE code: Data centres are usually categorised under NACE code 6311 and do not fall into the manufacturing categories targeted in the proposals. Nevertheless, data centres are industrial scale, electro-intensive facilities that use energy to process, store and transact digital data and produce heat as an industrial by-product.
- Complexity: Data centres are complex, so energy technologies are emerging on multiple fronts: software, IT hardware, networks, infrastructure, HVAC (cooling - from fluid dynamics

and computational real time monitoring to equipment upgrades) and other energy stewardship solutions.

- Applicability: One advantage of data centres is that the operating model is fairly consistent and therefore a solution that works in one data centre is likely to be replicable more widely across the sector.
- Potential scope: Data centres are electro-intensive, so emissions are almost entirely Scope 2 and the majority of power purchased by the UK sector (76.5%) is certified 100% renewable. Energy generation projects are out of scope, so our focus is on energy efficiency and avoided emissions rather than fuel switching.
- Activation barrier: Data centres must run 24/7 so retrofitting energy solutions, particularly in older sites, is problematic: a data centre operation cannot be shut down for upgrades in the way that a road can be coned off overnight. Working around this adds both cost and risk and additional funding may be productive in overcoming this barrier to activation.
- Pace of change: Technology is developing rapidly within the sector, more rapidly than any other industry. New projects and technologies are emerging all the time. Just because we can't put our finger on anything in 2019 does not mean that there won't be suitable candidates by mid-2020.

5 Next Steps

- We are still struggling to get to grips with the proposals and how they are relevant in a data centre context. We believe that there could be significant energy saving opportunities and that funding could help tip the balance in terms of ROI for those large, long term, high capex projects that cannot be justified under normal business operations. Pinning these down is going to take some time and two things would help us enormously:
 - Firstly ensuring the scope remains wide so that if there are potential projects they have not been inadvertently excluded and
 - Secondly, engaging in dialogue with those within the sector both working in operational roles and for suppliers of energy saving technologies to improve mutual understanding of
 - The relevance of the proposals to the data centre environment
 - The energy issues that operators are struggling with and
 - The art of the possible in terms of solutions in the market or in development.

We are more than happy to facilitate that discussion. Do please get in touch if you need more information or clarification on the above.

Further Reading

[IETF: informal comments on pre-consultation](#)

[Data Centre Energy Routemap](#)

[Ten Myths About Data Centres](#)

[2016 consultation response on the Energy Technology List](#)

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