



**Engineering and  
Physical Sciences  
Research Council**



**Economic  
and Social  
Research Council**

**Centre for Research into Energy Demand Solutions  
(CREDS)  
Mid-Term Review Panel Report  
by the Research Councils UK Energy Programme  
funded by EPSRC and ESRC**

March 2021

*This document reports the conclusions of a Panel of experts.  
The views expressed are entirely those of the Panel.*

## Introduction

The Centre for Research into Energy Demand Solutions (CREDS) was awarded £19.5m of funding by the Engineering and Physical Sciences Research Council (EPSRC) and the Economic and Social Research Council (ESRC) in April 2018. The project is expected to run for five years, with an end date of March 2023.

The Centre's aims are:

- To develop and deliver internationally leading research, focussing on energy demand from a systemic, socio-technical perspective.
- To secure impact for UK energy demand research in businesses and policymaking.
- To champion the importance of energy demand, as part of the strategy for transition to a secure and affordable low-carbon energy system.

The Centre's research objectives are to understand how to:

- Go further, by delivering more ambitious technological change and energy using practices.
- Go faster, by accelerating innovation, including through more effective policy intervention.
- Facilitate greater flexibility in energy demand to balance increasingly complex energy systems.

The Centre's impact objectives are to be:

- The primary source of independent advice on energy demand to UK policy makers and commentators.
- A trusted partner of established and new businesses in advancing energy demand innovation.
- A leader in building the capacity of energy demand research in the UK

This light-touch mid-term review of CREDS was commissioned to use the evidence provided to assess whether the Centre is on track to achieve its core objectives and to make recommendations for the future delivery of energy demand research.

The review was accompanied by evidence provided by the UKRI office, CREDS and CREDS Advisory Board who contributed through a survey. The stakeholder survey was designed by UKRI staff, to gather input from the energy research community on the value of CREDS to individuals and the energy demand research landscape. See *Annex A for Evidence Sources*.

A Panel of experts was formed to conduct the review. Panel membership was comprised of independent members of high standing in the UK and internationally who cover the breadth of energy demand research. This included representatives from academia, government and industry. See *Annex B for Panel Membership*.

The review was structured around the following assessment criteria developed from the core objectives set by UKRI at the outset of commissioning CREDS:

- *Is the Centre delivering World Class Research in the area of End Use Energy Demand?*
- *Is the Centre maintaining a critical mass of activity through a coherent programme of research that cover the full breadth of the topic?*
- *Is the Centre achieving wider integration through cross cutting challenges and links with supply side with an understanding of whole energy system research?*
- *Is the Centre acting as a focal point for engagement and communication for relevant stakeholders such as policy makers?*
- *Is the Centre on track to deliver research that has real and measurable impact on the UK energy landscape and beyond?*
- *Is the Centre acting as a beacon for Equality Diversity and Inclusion?*
- *Is the Centre on track to deliver the leaders of tomorrow, building capacity through the training of highly skilled multi-disciplinary researchers, developing early career networks, and succession planning?*

This served as the basis for panel discussion and formulating recommendations. See *Annex C for Panel Guidance*.

The Panel reviewed the provided guidance and evidence and then scored the Centre's performance against each criterion. This was followed by a Review Panel Meeting where CREDS staff were interviewed and invited to give a presentation. The Panel then discussed and provided final scores for each criterion based on their assessment of the Centre throughout the entire process.

The Review Panel Meeting was held on Wednesday 3<sup>rd</sup> March 2021. This report summarises the review process and the discussion and recommendations of the panel.

## Outcomes of the Review

The Panel reviewed each criterion in turn, taking account of information gathered in the interview and provided revised scores. The discussion and recommendations to CREDS are summarised under each assessment criteria below. A request for an action plan, that covers several criteria, is detailed later in the report.

### **Criteria 1:**

#### **Is the Centre delivering World Class Research in the area of End Use Energy Demand?**

**Score: 5** (*Six panel members scored this as 5 and four panel members scored it as 4*)

The Panel defined world class research as ‘research that is of the highest scientific rigor and excellence, with regard to design, method, execution and analysis, and is recognised by peers as among the best in the field on an international scale.’ and evaluated what has been produced as delivering excellent research outcomes but with some minor recommendations for improvement. A particular strength was the Buildings and Energy theme. However, the Panel recognised that some projects are further along the journey to delivering world-class research than others, due to interdisciplinarity taking more time to establish or, as some themes build on previous investments, are in a position to deliver outputs and impacts at a more rapid pace. The Panel described the success of themes as akin to a bell curve, with a few exceeding expectations, some less well developed and the majority performing well in the middle. As a result, careful monitoring is required to ensure that this gap in performance does not widen. CREDS should take time to consider this thematic objective of delivering world-class research and take stock of all projects to assess if they are on track to meet it.

Additionally, the Panel thought that the Centre’s aims of going ‘faster, further and flexibly’ should be revisited and contemplated whether these aims still reflect the work the Centre is currently doing and plans to do going forward. The Panel commended the work of the FAIR project and advised CREDS to give more consideration to themes of equity and justice within their aims and how it may permeate through other themes.

The Panel would have liked to have seen more evidence of international engagement and comparison studies to learn and share best practice from an international perspective. The Panel saw an opportunity for more meaningful knowledge exchange and benchmarking of policies and impacts from similar international research. CREDS should seek to define the applicability and usefulness of these policies and impacts in the UK.

### **Recommendations:**

- Consider the aims and research programme of the Centre, whether they still align and are reflective of the future evidence needs. Develop a set of benchmarks/performance criteria that can be used to define world-class research and identify what themes are going to need assistance to achieve this by the end of the project.

### **Criteria 2:**

## **Is the Centre maintaining a critical mass of interdisciplinary activity through a coherent programme of research that covers the full breadth of the topic?**

**Score: 5** (*Eight panel members scored this as 5 and two scored it as 4*)

The Panel noted that the Centre has done well in ensuring interdisciplinarity across the themes and challenges. Cross team activity is well designed and planned to ensure critical mass of activity. The Panel especially liked the 'Shifting the Focus towards Energy Demand' report that brought the whole centre together. The Centre has clearly built on existing work, established relationships at an early stage and has made use of the flexible fund for development of that critical mass. It was noted that the Centre's flexible approach enabled them to shift focus to look at the impact COVID-19 has had on their work.

The Panel saw an opportunity to continue development and utilise opportunities within the Centre. For example, it was noted that on a Centre-level CREDS is quite interdisciplinary, but more could be done at individual theme level. The Panel noted there were disciplinary gaps that could still be explored and integrated, particularly in the areas of financing, energy efficiency and behavioural economics of energy demand. Additionally, it was thought that the Centre could give more consideration to understanding the societal dimensions of energy demand research, particularly when demand reduction may have unintended negative consequences for society.

The Panel highlighted the importance of responsible research and innovation and the Centre's role in delivering this. CREDS should reflect on this and consider where they can share examples of best practice and case studies. The Panel suggested that a greater structural approach to interdisciplinarity could be explored, although the Panel empathised with the tension between interdisciplinary research and the way some more traditional research organisations are structured and siloed into disciplines. There is a potential opportunity for CREDS to influence the landscape here.

The Panel recognised that although the Centre does cover a breadth of energy demand themes, it cannot cover every aspect within energy demand. The Panel sees a great benefit in CREDS conducting a gap analysis as part of the action plan to justify, and equally make clear, why some areas relevant to the energy system are out of their scope and to identify areas where more can be achieved.

### **Recommendations:**

- Review the level of inter-disciplinarity being achieved across the programme and how the Centre can achieve additionality, rather than focusing on individual institutional members. Make improvements where required, including seeking to influence institutional cultures where these inhibit more effective working practices.
- Reflect on the role CREDS has in delivering Responsible Research and Innovation and promote good practices and case studies where appropriate.
- Undertake a gap analysis of CREDS, clarify what is 'in' and 'out' of scope for the Centre, to provide overt clarity, and identify where improvements can be made.

### **Criteria 3:**

**Is the Centre achieving wider integration through their cross-cutting challenges and links with the supply side, with an understanding of whole energy system research?**

**Score: 4** (9 panel members scored this as 4 and one scored it as 3)

The Panel noted that the cross-cutting challenges appeared to be working well and the 'Shifting the Focus' report does a good job of pulling things together in a useful way. However, the Panel had some notable concerns regarding integration across the Centre that overlapped with concerns related to interdisciplinarity.

CREDS has a clear strength in being able to bring together various different groups of researchers to address the challenges of energy demand. However, there is a need for the Centre as a whole to be more challenge-led as opposed to each individual project adhering to their own aims and goals. It was noted that CREDS is holding funds for integration and the Panel advise CREDS to develop concrete strategies and plans for deploying these funds to strengthen whole centre integration.

A landscape scoping activity in partnership with UKRI will be beneficial to support CREDS awareness of where it sits in the overall research landscape and how the Centre integrates not only with itself, but with other investments.

The Panel scored this criterion as a 4 meaning the Panel have minor recommendations for improvement. The grant holder should develop an action plan, with input from UKRI and the CREDS Advisory Board, to address these recommendations. The requirements for the action plan are detailed below.

**Recommendations:**

- Scope where energy demand sits in the broader energy transition and its interdependencies with other parts of the system and associated investments.
- Consider energy demand interactions between sectors – for example, heat and transport. CREDS should consider the impact of delivering sector specific solutions, the unintended consequences or additional challenges these create and the need (or not) for greater integration.

**Criteria 4:**

**Is the Centre acting as a focal point for engagement and communication with relevant stakeholders such as policy makers?**

**Score: 4** (Seven panel members scored this as 4 and three scored it as 5)

CREDS overall approach to engagement is good and the Panel were impressed with what has been achieved so far, for example, the level of engagement with some central government departments is excellent. It was clear that CREDS is seen as a focal point for policy engagement and has been sought out by government departments for consultation.

The Panel agreed that engagement with business could be explored further or showcased. There are currently limited standards or suitable frameworks for environmental, social and corporate governance in organisations. As a result, many businesses are seeking support to

transition to net zero. There is an opportunity here for CREDS to capitalise on this appetite and engage businesses on energy demand solutions. The Panel acknowledged the work with trade bodies but thought engagement with end users could go further as trade bodies alone do not link to all necessary audiences.

The Panel noted the good work with Innovate UK, the High Value Manufacturing and the Energy Systems Catapults but were conscious that work does not cover the breadth of what CREDS is doing.

The Panel agreed that engagement with local government could also be explored further, noting that the existing engagement was primarily neighbourly, giving a limited portfolio of types of local authority. A high-level assessment of the typology of local authorities should flag gaps in engagement and allow CREDS to fully cover urban, sub-urban, rural and coastal settings (each with their own demand challenges); as well as ensuring work was being done with unitary authorities in Wales, Scotland and England, and two-tier authorities in England (each with their different challenges of addressing demand).

Engagement with energy suppliers was considered by the Panel to be limited. Energy suppliers are key to the implementation of eco-initiatives such as the smart metering rollout. Further interaction with energy suppliers is needed to support the uptake of CREDS solutions.

CREDS should re-evaluate who the relevant stakeholders are, those who will have the most influential impact on energy demand and identify where there are gaps in their existing stakeholder network. There was a recommendation to consider non-receptive stakeholders also and improve efforts to engage here, as with the right approach even non-receptive stakeholders may be persuaded.

The Panel scored this criterion as a 4 meaning the Panel have minor recommendations for improvement. The grant holder should develop an action plan, with input from UKRI and the CREDS Advisory Board, to address these. The requirements for the action plan are detailed below.

### **Recommendations:**

- The CREDS team should undertake a thorough review of their stakeholder engagement activities, particularly with the private sector and local government, identify gaps and develop a plan for how these can be addressed.
- CREDS should adopt a robust and resilient approach to stakeholder engagement to maximise impact, particularly with stakeholders who initially appear unreceptive.

### **Criteria 5:**

**Is the Centre on track to deliver research that has real and measurable impact on the UK energy landscape and beyond?**

**Score: 5** (Nine panel members scored this as 5 and one scored it as 4)

Overall, the Panel were pleased with CREDS performance against this criterion. There is good evidence of impact in the report, case studies presented and testimonials from stakeholders. The Panel highlighted the UNEP and E-Bike case studies as good examples. It was largely considered that, while impact can take time to manifest, the Centre is on track and has good pathways in place, notwithstanding the greater emphasis that needs to be placed on private and local government stakeholders described under criteria 4. Overall, CREDS has shown evidence of making significant progress against the Centre's own impact plans in a short amount of time.

To build on this the Centre's impact plan could feature more metrics and success measures to show where a difference had been made and tangible impact has been achieved.

The Panel highlighted that while the Centre's engagement with some central government departments is excellent, CREDS needs to be mindful of the balance between identifying problems and developing solutions to ensure impact is achieved.

Finally, the Panel emphasised the importance of monitoring and recording impact as it happens. CREDS must capture impacts to showcase the successes throughout delivery of CREDS.

#### **Recommendations:**

- Review the Impact Plan to explore where metrics and success measures can feature to highlight where real change or impact has been achieved.
- Review how the Centre collects evidence of impact to ensure they are able to demonstrate impact at the end of the grant.

#### **Criteria 6:**

##### **Is the Centre acting as a beacon for Equality Diversity and Inclusion (EDI)?**

**Score: 5** (*Eight panel members scored this as 5 and two scored it as 4*)

The Panel were impressed with the Centre's approach to equality, diversity and inclusion. They noted, especially when compared to other centres, that the work CREDS has done is commendable. The Panel were complementary regarding the recent focus on bullying in addition to the policy statements and processes CREDS have put in place. Overall, the Panel regarded CREDS as being excellent in this regard but in order to truly be a beacon of EDI this could be developed further.

The EDI plan should move beyond intentions and focus on actions that will achieve tangible change as well as articulating why CREDS is an example for others to follow. The Panel encourage the continuation of projects like the work on bullying and the survey work and encourages the Centre to go further with plans to influence Universities and their recruitment processes, although it was recognised there are limits to what the Centre can achieve here.

It was noted that only one researcher talked about EDI in the context of the Centre's research. The Panel strongly recommended that EDI is championed and integrated fully through all research themes, taking onboard learning from the FAIR project.

## **Recommendations:**

- Revisit the EDI Plan to include measures of success and:
  - Have greater emphasis on actions.
  - Develop work focused on influencing universities and institutions to be better at EDI.
  - Ensure EDI is championed and integrated within all research themes.

## **Criteria 7:**

**Is the Centre on track to deliver the leaders of tomorrow, building capacity through the training of highly skilled multi-disciplinary researchers, developing early career networks, and succession planning?**

**Score: 5** (*Five panel members scored this as 6 and five scored it as 5*)

The Panel were very impressed with the Centre's performance against this criterion and it was noted as one of their leading strengths. CREDS are deliberative and intentional in their approach to capacity building and developing early career researchers. The Panel commended the Centre's emphasis on people and noted this was reflected well throughout the themes by the Centre's leadership. The Panel were particularly impressed by the case study presented on this area.

It was noted that the Centre tends to appoint junior researchers in more senior positions than expected. This was considered an admirable approach by the Panel, but they also warned that such an approach does come with risks and should be reflected upon and included in the Centre's risk register. It was also noted that training early career researchers as interdisciplinarians can make it difficult for them to gain employment and positions within universities and institutions (adding emphasis to the recommendation regarding influence in response to Criteria 2). CREDS should give consideration to the trajectories of early career researchers after training and to give attention to diversity within career aspirations.

The panel emphasised the importance of developing researchers at all levels of their career. CREDS has an excellent approach to early career researcher development and this support should extend to mid-career researchers if they are to truly develop the 'leaders of tomorrow' and those who will succeed current leaders in energy demand. This should be addressed and explored as part of the action plan.

## **Recommendations:**

- Consider diversity in career aspirations and trajectories for both ECRs and mid-career researchers.
- Ensure that the risks associated with the approach of appointing ECRs in more senior positions are effectively managed (the panel would expect to see this specifically highlighted in the Risk Register).

## Action Plan

Building on the excellent work the Centre has done thus far, the Panel made the above recommendations to encourage CREDS to take stock and reflect on the centre's scope and aims to optimise CREDS impact potential.

In addition to the above recommendations, the Panel requested that an action plan be developed in conjunction with CREDS Advisory Board and UKRI. The action plan should address six key areas where further reflection or clarification is needed. Stakeholder Engagement, Integration, Scope, Interdisciplinarity, Impact and Capacity Building. Although the Panel indicated a request for an action plan through their scores for criteria 3 and 4, they recognise all criteria are interdependent and would like to see an action plan for additional areas to encourage activity. The following is a detailed description of what points the Panel require CREDS to reflect on under each key area:

### **Stakeholder Engagement:**

Develop a broader and more meaningful engagement strategy across the whole system both in the UK and internationally. This should:

- Enable CREDS to evaluate their current stakeholder network identifying where there are gaps.
- Include plans for engaging with non-receptive stakeholders as well as receptive stakeholders as resources allow.
- Enable CREDS to critically investigate how lessons can be learned via international engagement and how these might be applicable and subsequently implemented in the UK.

### **Integration:**

Develop a strategy for the integration of themes and areas. This should:

- Consider all the dimensions of energy demand reduction and enable CREDS to justify why they are not involved in some areas and identify gaps or weaknesses where more could be achieved through CREDS.
- Include a cross-cutting challenge-led work package that develops integration across the entire programme.
- Involve research landscape scoping work in conjunction with UKRI to understand and assess where CREDS is situated in the landscape and can integrate with other funded investments (such as UKERC).

### **Scope:**

Undertake a gap analysis of CREDS, clarify what is 'in' and 'out' of scope for the Centre, and identify where improvements can be made, particularly in areas such as finance, transport, behavioural economics, and societal issues. There is also a need to review CREDS role in exploring any negative consequences of demand reduction for society.

### **Interdisciplinarity:**

Develop a structural approach and gap analysis of where interdisciplinarity can be improved and further integrated across the whole breadth of the Centre. This should include seeking to influence institutional cultures where these inhibit more effective

working practices and limit the career opportunities for interdisciplinary early and mid-career researchers.

**Impact:**

Develop a solutions-focused impact strategy to ensure the Centre maximises its potential for impact. This should:

- Shift engagement with stakeholders to more solutions-focused discussions and recommendations.
- Identify fast-track routes for implementation of solutions so there are no missed opportunities.

**Capacity Building:**

Develop and implement a Succession Planning strategy to ensure researchers are supported and developed in all stages of their careers.

## Conclusions

- The overall score the Panel gave CREDS was a 5. The Panel consider CREDS is delivering excellent research outcomes but there are some minor recommendations for continuous improvement. Funding should be continued.
- The Action Plan should be developed with the CREDS Advisory Board and UKRI. A reasonable timeline to produce the plan was agreed by UKRI to be three months. The plan should be delivered and reflected upon across the life of the Centre.

## **Annex A: Evidence Sources**

- **Case Studies:** CREDS have produced 10 short case studies to showcase their successes.
- **CREDS report:** This report will reflect on CREDS progress so far (Apr 18 - Feb 21).
- **Advisory Board Survey:** This will provide input into review from key (academic and non-academic) stakeholders, while avoiding conflict with the independent review panel.
- **Original Commissioning Documentation:** Original call specification and completed proposal form and associated documents.

## **Annex B: Panel Membership**

### **Review Panel Membership**

- **Mike Colechin (non-voting Chair)** – Cultivate Innovation Ltd
- **Rebecca Ford** – University of Strathclyde
- **Sara Walker** – Newcastle University
- **Jason Chilvers** – University of East Anglia
- **Daire McCoy** – London School of Economics
- **Mike Bradshaw** – Warwick Business School
- **Victoria Haines** – Loughborough University
- **Hywel Lloyd** – UK100
- **Susana Garcia** – IDRIC
- **Ian Llewellyn** – BEIS
- **Neville Jackson** – RAC Foundation

### **UKRI Office**

- **Helen Rogers** – Senior Portfolio Manager, Environment, UKRI-ESRC
- **Edward Jones** – Portfolio Manager, Energy, UKRI-EPSC
- **James Fleming** – Head of Energy, UKRI-EPSC
- **Susie Stevenson** – Head of Environment, UKRI-ESRC
- **Ben Miller** – Research Portfolio Manager, Environment UKRI-ESRC



## **Annex C: Panel Guidance**

This document is designed to brief panel members for the Centre for Research into Energy Demand Solutions midterm review on the aims, objectives and role of the Panel.

### **Introduction**

CREDS is a research centre established in 2018 with a vision to make the UK a leader in understanding the changes in energy demand needed for the transition to a secure and affordable, low carbon energy system.

CREDS was awarded £19.5m of funding by the Engineering and Physical Sciences Research Council (EPSRC) and the Economic and Social Research Council (ESRC) in April 2018. The project is expected to run for five years, with an end date of March 2023.

Building on the work of six previously funded End Use Energy Demand Centres, CREDS aims to address the key challenge of moving to an energy system that is secure, affordable and sustainable. With a team of more than 130 academics at over 20 academic institutions across the UK, CREDS look at energy use sectors and cross-cutting themes such as Buildings & Energy, Digital Society, Flexibility, Materials & Products, Policy & Governance and Transport & Mobility. CREDS also work on more specific projects within the areas of Decarbonisation of heat, Fuel and transport poverty in the UK's energy transition (FAIR) and the Decarbonisation of the steel industry.

CREDS has reached the mid-point of their funding and UKRI would like to review their progress so far to assure they are on track to achieve their core objectives and to assess whether continued investment is justified. Additionally, the review will advise UKRI on the strategic direction of energy demand research for anticipated future funding.

### **Aims of the review**

The review will address the following objectives:

1. To use the evidence provided to assess whether the Centre is on track to achieve its core objectives.
2. To assess whether continued assessment is justified.
3. To identify areas that UKRI should consider in future energy demand research.

The review process will culminate in the following outputs:

1. A report on the performance of the Centre that records the conclusions and recommendations of the Panel to the Centre and UKRI.

2. Recommendation to either continue or cease funding the Centre and subsequently whether any action needs to be taken if the Centre is to continue.
3. Recommendations to UKRI for future or outstanding energy demand research priorities and mechanism to deliver them.

## Terms of reference for the Review Panel

### Responsibilities

Review Panel members are responsible for completing their own assessment and will have the opportunity to address any clarifying questions to the Centre during the interview phase of the Review Panel meeting. UKRI office will arrange a pre-meeting to collectively discuss where there is need to clarify information. The Centre will be given the opportunity to present to the Review Panel based on these questions for clarification at the interview (similar to a PI response). Your individual assessment and reflections from the interview will be the basis of the following Review Panel discussions.

Based on the evidence presented, you are asked to assess whether CREDS has delivered sufficiently against its core objectives, using the assessment criteria below, and consider both **impact and process**. Individually, you are asked to provide written comments and an initial score against each criterion by **Friday 19 February** on the template provided in annex. Initial scores will be collected to steer the Panel's discussion and are expected to fluctuate after the interview and general discussion of each criteria. By the end of the discussion the Panel will collectively assign a single overall score with accompanying recommendations. Recommendations should focus on how CREDS should go forward.

COVID-19 has had an impact on research across the board. In this review we are not asking panel members to assess how well the Centre responded to COVID-19 challenges and opportunities, but general reflections are welcome.

Additionally, we would like you to consider the future of energy demand research that UKRI should support after the current CREDS award ends and how that might best be delivered. Please consider the following:

- Is CREDS an effective way to deliver UK energy demand research?
- Are there any research opportunities missing in addition to the scope of CREDS or broader requirements?
- How should UKRI strategy position energy demand research going forward?

The Panel will be facilitated by the Chair and UKRI Office in responding to these questions and reaching recommendations.

### **Evidence:**

The following evidence sources will be provided to you, via Microsoft Teams, to support the assessment of the Centre:

- **Case Studies:** CREDS have produced 10 short case studies to showcase their successes.
- **CREDS report:** This report will reflect on CREDS progress so far (Apr 18 - Feb 21).
- **Advisory Board Survey:** This will provide input into review from key (academic and non-academic) stakeholders, while avoiding conflict with the independent Review Panel.
- **Original Commissioning Documentation:** Original call specification and completed proposal form and associated documents.

The interview at the start of the Panel meeting will provide an opportunity to put any questions to CREDS that have arisen through assessing the evidence.

### **Assessment Criteria:**

Please consider the following questions when making your assessment.

#### **1. Is the Centre delivering World Class Research in the area of End Use Energy Demand?**

By 'world class research' we refer to research that is of the highest scientific rigor and excellence, with regard to design, method, execution and analysis, and is recognised by peers as among the best in the field on an international scale.

- Has the Centre progressed as planned? i.e. are they achieving what they set out to do in their proposal?
- Are they on the right track to achieve their outcomes? Are these still the right outcomes?
- What is the added value of the Centre?

#### **2. Is the Centre maintaining a critical mass of interdisciplinary activity through a coherent programme of research that covers the full breadth of the topic?**

By 'critical mass' we refer to the minimum amount of activity the Centre must achieve to deliver their outcomes.

- Do the themes cover the full breadth of energy demand research?
- Is their approach to interdisciplinary working well?
- Would a critical mass be maintained without the Centre?

**3. Is the Centre achieving wider integration through their cross-cutting challenges and links with the supply side, with an understanding of whole energy system research?**

By 'wider integration' we refer to internal integration of the whole Centre and its 9 research challenges.

- Has the Centre's approach to integration within and throughout the challenges worked well?
- Are the cross cutting challenges the right ones to focus on to encourage integration?

**4. Is the Centre acting as a focal point for engagement and communication with relevant stakeholders such as policy makers?**

By 'focal point' we refer to the recognition by stakeholders as the primary source of energy demand research evidence and is sought out regularly.

- Has the Centre's approach worked well?
- What is working well, or not working well, from the stakeholder perspective?
- Are they reaching the right audience?

**5. Is the Centre on track to deliver research that has real and measurable impact on the UK energy landscape and beyond?**

- How well are they capturing the changes that can be attributed to them?
- Are they demonstrating impact well?
- Are there other ways to best demonstrate their impact?

**6. Is the Centre acting as a beacon for Equality Diversity and Inclusion?**

By 'acting as a beacon' we refer to the effective delivery and the way the Centre promotes, supports, and guides others to address the challenges of EDI in the field of energy demand.

- Has the Centre's approach to EDI worked well?
- Would EDI action in the energy research landscape happen without the Centre?

**7. Is the Centre on track to deliver the leaders of tomorrow, building capacity through the training of highly skilled multi-disciplinary researchers, developing early career networks, and succession planning?**

- Would the development of future leaders in energy demand research happen without the Centre?

### Scoring Criteria:

You asked to provide a score against each criterion during your assessment of the evidence. There will be an opportunity after the interview to amend these ahead of the Review Panel discussion. These individual scores will allow you to establish your own view of the overall score. By the end of the discussion the Panel will settle on a single overall score.

<b>6</b>	The Panel consider the grant is delivering excellent research outcomes and no changes are needed. Funding should be continued.
<b>5</b>	The Panel consider the grant is delivering excellent research outcomes but there are some minor recommendations for improvement. Funding should be continued.
<b>4</b>	The Panel have minor recommendations for improvement. The grant holder should develop an action plan, with input from UKRI and Advisory Board, to address these. Funding should be continued.
<b>3</b>	The Panel have major recommendations for improvement. The grant holder should develop an action plan, with input from UKRI and Advisory Board, to address these. Funding should be continued.
<b>2</b>	The Panel have major concerns about the grant. Funders may decide to work with the Centre Director to develop an action plan for conditional/phased funding of the remaining period. Funding should not be continued as the Centre currently stands.
<b>1</b>	The Panel have critical concerns about the grant. Funding should cease immediately.

### Timeline

<b>1 February 2021</b>	Submission of CREDS report including finalised Case Studies. Documentation shared with the Panel Advisory Board Survey Closed.
<b>8 February 2021</b>	Synthesis of Advisory Board Survey shared with the Panel
<b>19 February 2021</b>	Deadline for initial comments and scores to be uploaded to Microsoft Teams

<b>25 February 2021</b>	1 Hour Pre-Meeting for the Panel to discuss the need for clarifying information from CREDS
<b>3 March 2021</b>	Mid-Term Review Panel.
<b>w/c 8<sup>th</sup> March</b>	Verbal notification of recommendation
<b>May 2021</b>	Short Report produced including recommendations to the Centre for their final year, and recommendation to UKRI on energy demand research.

## Review Panel Meeting Agenda

25 February 2021	
15:00	1 Hour Pre-Meeting for the Panel to discuss the need for clarifying information from CREDS

3 March 2021	
9:30	Morning briefing and introduction from UKRI
10:00	Presentation and interview Q&A
10:45	<i>Break</i>
11:00	Discussion, scoring, and recommendations (Assessment Criteria 1-4)
12:00	<i>Break</i>
12:15	Discussion, scoring, and recommendations (Assessment Criteria 5-7)
13:00	<i>Lunch Break</i>
14:00	Facilitated Session on future energy demand research that UKRI should consider supporting
15:00	<i>Break</i>
15:15	Summary of recommendations, next steps and panel payment info.
16:00	End

## Review Panel Membership

The Review will be carried out by an independent Review Panel of high standing UK and international members who cover the breadth of energy demand research:

- **Mike Colechin (Chair)** – Cultivate Innovation Ltd
- **Rebecca Ford** – University of Strathclyde
- **Sara Walker** – Newcastle University
- **Jason Chilvers** – University of East Anglia
- **Daire McCoy** – London School of Economics
- **Mike Bradshaw** – Warwick Business School
- **Victoria Haines** – Loughborough University
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#### **UKRI Office**

- **Helen Rogers** – Senior Portfolio Manager, Environment, UKRI-ESRC
- **Edward Jones** – Portfolio Manager, Energy, UKRI-EPSC
- **James Fleming** – Head of Energy, UKRI-EPSC
- **Susie Stevenson** – Head of Environment, UKRI-ESRC
- **Ben Miller** – Research Portfolio Manager, Environment, UKRI-ESRC

#### **END OF GUIDANCE**

## Annex - Comments and Scoring Template

You are invited to use the template below to structure concise comments and scores prior to the pre-meeting. Comments and scores must be submitted to UKRI by Friday 19 February via upload to Teams.

Name:

Score	Comments
	<b>1. Is the Centre delivering World Class Research in the area of End Use Energy Demand?</b>
	<b>2. Is the Centre maintaining a critical mass of interdisciplinary activity through a coherent programme of research that cover the full breadth of the topic?</b>
	<b>3. Is the Centre achieving wider integration through cross cutting challenges and links with supply side with an understanding of whole energy system research?</b>
	<b>4. Is the Centre acting as a focal point for engagement and communication for relevant stakeholders such as policy makers?</b>
	<b>5. Is the Centre on track to deliver research that has real and measurable impact on the UK energy landscape and beyond?</b>
	<b>6. Is the Centre acting as a beacon for Equality Diversity and Inclusion?</b>
	<b>7. Is the Centre on track to deliver the leaders of tomorrow, building capacity through the training of highly skilled multi-disciplinary researchers, developing early career networks, and succession planning?</b>

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**Overall Score:**