

Prospering from the Energy Revolution

Detailed Designs of Smart,
Local Energy Systems
competition brief.

David Richardson - UKRI





Detailed Designs of Smart, Local Energy Systems

Competition overview

Up to £30 million is available for;

Ground-breaking designs of local energy systems that intelligently integrate the provision of heat power and transport, using investable market approaches and business models that can successfully attract private finance for scaling and replication.

- Applicants are eligible to apply for up to £3 million in grant funding.
- We will consider proposals for up to £5 million in grant funding if they are of exceptional scale and complexity and leverage exceptional levels of matched funding.
- Any consortium considering applying for over £3 million must gain approval by providing full justification by email to support@innovateuk.ukri.org at least 10 days before the competition closes.
- We will be looking to fund a diverse portfolio of projects.

Detailed Designs of Smart, Local Energy Systems

Matched funding



Businesses **must** have eligible costs funded at the below rates. Matched funding must come from sources of private funding.

Applicant Business Size	Industrial Research
Micro/Small	70%
Medium	60%
Large	50%

Proposals should aim to achieve a ratio of at least a 2:1 leverage of grant funding overall. That means that we would like you to provide an investment of at least 2 times the amount you are being funded. Value for money and leverage of private funding will be a component of assessment.

Detailed Designs of Smart, Local Energy Systems

Competition summary



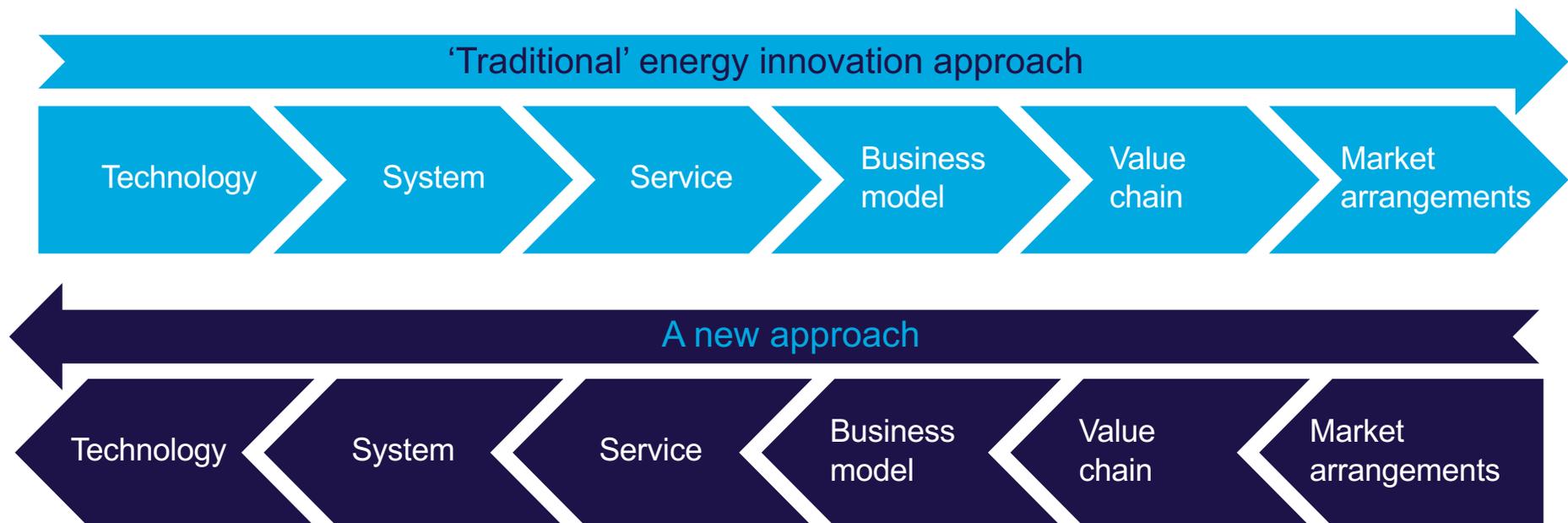
Projects must develop local energy system designs fit for implementation in and replication in the 2020s. On completion of the 24 month project you must provide compelling, quantified evidence that your design can:

- deliver bill reductions of at least 25% for the end consumer
- unlock substantial private investment to build and replicate the approach in the 2020s and beyond, showing that your business model proposition can attract up to 10 times more investment in energy systems technologies (compared to business as usual) once implemented
- create high value local jobs and UK supply chain growth
- reduce energy emissions (tonnes of carbon dioxide equivalent, tCO₂e) for the locality to below [Carbon Budget 5](#) levels, and present a feasible route towards net-zero emissions
- improve efficiency and productivity of the local energy system
- improve energy security and resilience, both short and long term
- build world-leading expertise in smart energy, and develop components (products, services and skills) with high export potential

Prospering from the Energy Revolution:



The Detailed Designs of Smart, Local Energy Systems competition focusses on the creation of arrangements which create a prosperous market for innovative low carbon technologies. Energy System designs should be focussing on the business model and market approaches that can be implemented to enable at-scale deployment of low carbon technologies, in a way that can attract finance and investment.



Detailed Designs of Smart, Local Energy Systems

Some essential project characteristics

(read competition documentation for full requirements)

Integration of
**heat, power and
transport**

A work package
investigating investment
and financing
arrangements



World leading
project scale and
ambition

Consideration of
the future role of
gas as well as
electricity systems

Investigation of the policy
and regulatory conditions
needed to implement the
local energy system



Reduction in whole
system costs of
energy provision,
and lower bills

Assessment

Assessment will be around 11 key themes:



1. Description of project
2. Delivering your project
3. Driving growth in the industry
4. Improving user experience
5. Impact on the local energy market
6. Environment and energy system resilience
7. Innovation and ambition
8. Team and resources
9. Risks
10. Added value of public funding
11. Costs and value for money

Detailed Designs of Smart Local Energy Systems: Timeline and key dates



	2019										2020					
Activity timeline	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	
Competition documentation published	█															
Open for applications		█	█	█	█	█										
Interviews						█	█	█								
Applicants notified							█	█								
Project set-up							█	█	█	█						
Projects underway															Onwards to 2022 ---->	

Key dates	
First briefing event	30 April 2019
Competition opens	7 May 2019
Competition closes	7 August 2019 12:00pm
Invite to interview	20 September 2019
Interview panel week begins	14 October 2019
Applicants notified	25 October 2019

Developing your proposal

What outputs should your Detailed Design projects aim to achieve?



1. Quantitative analysis of current energy generation, consumption and distribution across the locality. Including constraints, and seasonal and daily patterns.
2. An optioned consideration of the favourable technologies and business models that could be deployed to decarbonise, reduce bills and pollution, attract investment etc.
3. Development of local energy market structures that will facilitate the delivery of flexible, intermittent, low cost, and low carbon technologies.
4. Consideration of the regulatory and policy conditions needed to deliver the desired market arrangements, with evidence of engagement with Ofgem, BEIS and industry to test the feasibility of these ideas.
5. In depth programme management development including project plans, deliverables, milestones and evaluation metrics.
6. An understanding of the impact on consumers and how consumer behaviour responds to the proposed market design.
7. Presentation of the financing options for delivery of market structures and technologies.
 - Who will pay?
 - Where are costs most appropriately borne by investors, consumers and public sector?
 - How are benefits and risks fairly shared?Evidence that these have been stress-tested with the range of financiers and citizen groups.
8. Ensuring your local energy market design is interoperable and scalable to surrounding areas





Developing your proposal

We welcome ambitious, diverse and multidisciplinary consortiums. Some stakeholders you should consider partnering with include...

- Organisations with a track record of delivering large infrastructure projects
- Network and information communication technology (ICT) specialists
- Innovative technology developers
- Local authorities
- Energy sector companies
- Community and consumer representative groups
- Academia researchers
- Innovators from outside the traditional energy sector
- Project managers, engineers, and multi-disciplinary consultants

and

- Exceptional leaders and communicators who can inform and inspire consumers and private investors

UK Research
and Innovation



Developing your proposal

Familiarise yourself with existing integrated energy systems projects in the UK and internationally. We expect these detailed designs to be of a scale and ambition that is world leading.

Example – Project LEO

The project will focus on small-scale electricity generation effectively distributed through a decentralised ‘smart’ grid - an approach known as the Distribution System Operator model. Set to run for three years, the project will balance local energy demand with local energy supply and generation, helping to test markets, inform investment models and, ultimately, assess the benefits.

There are around 90 local low carbon energy projects which could become part of the distribution network during this time. Priority projects will include a community hydro project, an electric vehicle transport hub and heat network proposals.





Developing your proposal

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UKERC: Review of energy systems demonstrators -

<http://www.ukerc.ac.uk/publications/review-of-uk-energy-system-demonstrators.html>

Prospering from the Energy Revolution Demonstrator projects -

<https://www.gov.uk/government/news/four-leading-edge-demonstrators-to-jumpstart-energy-revolution>

Prospering from the Energy Revolution Concept and Design projects -

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/778375/Smart Local Energy Systems Concepts and Designs - Competition Results.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/778375/Smart_Local_Energy_Systems_Concepts_and_Designs_-_Competition_Results.pdf)

Developing your proposal

Provide quantified evidence throughout your application to substantiate your claims.





Developing your proposal

Identify UK sites for replication upon completion of your design from the outset. Plan engagement with stakeholders in these areas to test your ideas as you develop your Smart, Local Energy System Design.



Areas you should be thinking about when developing your proposal.....



Input from investors



How will potential investors be engaged?
How will analysis, business models, and overall designs help to de-risk investment decisions.

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Energy efficiency

Whole systems market approaches and business models should include facilitating the rollout of energy efficiency measures and demand reduction



 Department for Business, Energy & Industrial Strategy

Financing deployments



How might financing for whole systems demonstrators work:

- Will financiers support components or full proposals?
- What private, public sector or consumer backing might be needed to fairly distribute risk?

Specialist tech industry

Engage and partner with specialist tech industry to apply techniques and learnings that have been successful in other sectors (telecoms, finance, transport etc)



Champion diversity



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and Innovation

Lack of women in energy 'holding back fight against climate change'

Gender imbalance at energy firms and industry events is slowing transition to greener power, claims expert



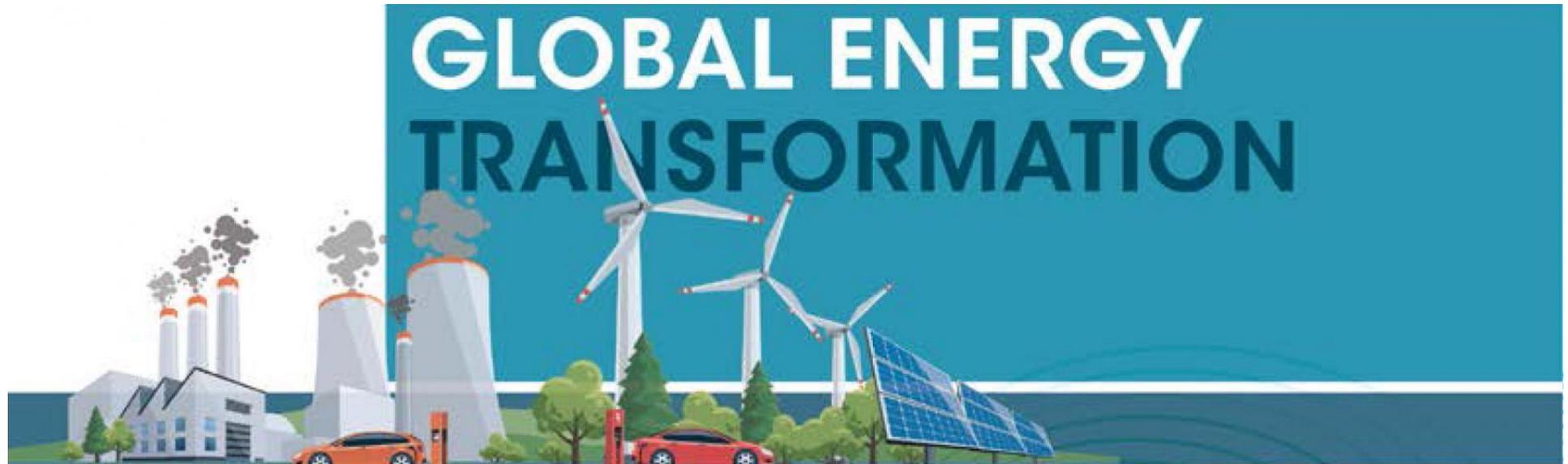
▲ Women demonstrate against climate change in the US. Photograph: Scott Olson/Getty Images

The lack of women in energy companies is holding back the sector's efforts to tackle climate change, a leading industry watcher has warned.

Be ambitious...



GLOBAL ENERGY TRANSFORMATION



A ROADMAP TO
2050

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Questions?

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