

Rural England

Opportunities and challenges for rural communities from zero net carbon legislation

July 2021



Introduction

- Nigel Wilcock, Mickledore – economic development perspective on the zero carbon requirement
- Rural England & Mickledore completed a complete review of the current situation and undertook discussions with a wide range of stakeholders in late 2020.
- Developed a report on the future issues facing rural communities and the opportunities for the future.

The potential problem

- Why the distinction?
- Private sector systems installation more profitable where there is critical mass
- Distributed populations involve greater travel distances
- Older built stock has less ability to change

Summary



Target net zero carbon emissions by 2050. This report considers rural economies. The main focus is the consideration of power generation, transport and heating for buildings. Not, in this case, rural land use although that is a further consideration.



The UK is behind target. In power generation large developments have allowed progress. In areas where incremental investment progress is slow there are difficulties ahead.



Rural areas are not all the same. The shift to low carbon is no longer technological but about setting the correct commercial model. Rural economies can develop new economic sectors.

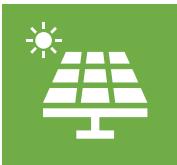
Summary



Zero carbon heat starts with better insulated buildings. Biofuels can start to reduce emissions immediately and in some buildings a transition to heat pumps– in off-gas grid areas there is already a commercial case for a shift away from oil. Some buildings will never be able to use low temperature solutions.



Transport follows a similar model – development in edge of village settings, maintaining local services and deployment of excellent broadband all reduces vehicle miles. Use of biofuel can immediately reduce emissions, but with a transition to electric vehicles.



Both heat and transport increase the demand for power but in rural areas there is the opportunity for greater local generation. Communities can be incentivised to approve more local schemes and create decentralised power grids.

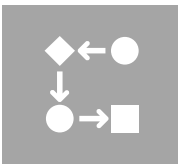
Summary



Biomass has an important role in heat in existing buildings – with a zero switching cost. Power generation and continued back-up capacity can also utilise bio-mass but if this slows the transition to zero emissions this will be counter productive. Delaying deployment will result in goals being missed.



Incremental change is difficult and there is currently a lack of clear political leadership – the central legislation is weak and this ties the hands of local government to drive change.



The bolt on incentives from government are piecemeal removing any clear signposting for the preferred technical solutions.

Summary



There is an urgency for action and direction would stimulate the rural economy creating an opportunity for business – building improvements, supply chains, installation, repair and maintenance.



This is not 'plug and play' but neither is it new to market – and other economies are ahead of the UK. There is therefore a need for training – industry and the consumer



Heat and power are areas where rural areas have many advantages. Despite the issues there is a path to a zero carbon rural economy and there is a clear opportunity for those who secure first mover advantage.

Imagining a Zero Carbon Village system

Enforcement

1



Fundamentals

- more sustainable locations
- reducing the need for car use. Fuels switch to bio-fuel equivalents

Imagining a Zero Carbon Village system

Enforcement

Building standards

1



2



Fundamentals

- more sustainable locations reducing the need for car use. Fuels switch to bio-fuel equivalents

The built stock needs a higher standard of insulation and low carbon fittings

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Building standards

Plug & Play

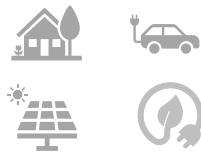
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2



3



Fundamentals
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The built stock needs a higher standard of insulation and low carbon fittings

Better understood plug & play technologies can be introduced into all facilities

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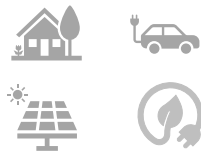
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Plug & Play

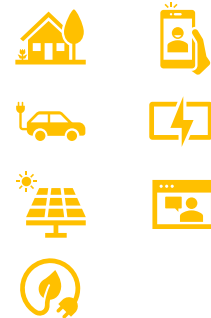
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Better understood plug & play technologies can be introduced into all facilities

Building systems

4



Homes & premises adopt a whole system approach

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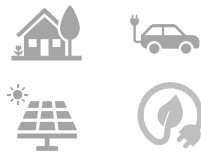
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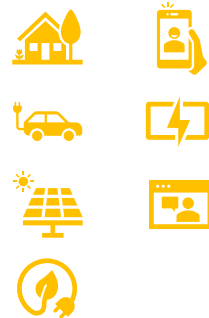
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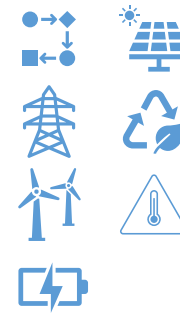
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Homes & premises adopt a whole system approach

Community systems

5



Communities adopt a whole system approach including local generation and private wire grids

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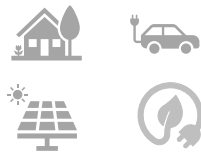
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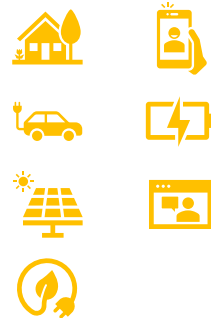
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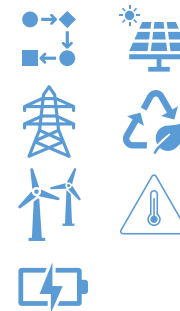
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Unpredictable future

H₂

Different technologies such as hydrogen may offer alternatives in the future

Conclusion

- Solutions are achievable
- Stimulus needs a consistent carrot and stick approach from Government
- Solutions can benefit communities in lowering fuel poverty and stimulating economic activity
- Solution can sustain / increase the role of rural communities in the future
- With no clearer plan we will only continue to deliver the isolated projects of the passionate – or small scale bolt on improvements to the status quo

Mickledore 2020