Decarbonising the energy grid

Purpose of report

For discussion.

Summary

The LGA has been working with Local Partnerships to understand the role renewable energy can play in meeting carbon reduction targets. Outputs from this piece of work include a good practice guide and a discussion paper setting out the nature of the challenges for local government from large scale development of renewable energy. Jo Wall, Strategic Director for Climate Response at Local Partnerships will provide a short presentation about this work as well as providing members with expert insight and potential implications for renewable energy generation.

Recommendation/s

That members consider the issues raised in the report and presentation to the Board meeting

* To note the strategic questions set out briefly in paragraph 8 and the next steps in paragraph 13

Action/s

Officers will act as directed

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Decarbonising the energy grid

Background

1. The Board identified renewable energy as an area to develop as part of the LGA’s climate emergency work programme. Local government has a strong track record in delivering local renewable energy schemes. The research from Local Partnerships looks ahead to the challenges of scaling up the delivery of renewable energy, and the impact this could have on local authorities.
2. In undertaking this work, Local Partnerships, who are part owned by the LGA and the Treasury, have drawn on its experience of advising and supporting councils on energy projects and its connections with the energy industry.

**Demand and supply issues**

1. The background to the discussion includes an analysis of current energy provision and a look ahead to changes in demand for energy. While smart technology is expected to reduce energy use, this will be offset by a growth in demand due increasing numbers of electric vehicles and the switch to electric heating.

Table 1: Modelling demand and potential for renewable energy:

|  |  |  |
| --- | --- | --- |
| Item | Current | By 2050 |
| Annual electricity demand | 285 TWh | Up to 422 TWh |
| Peak demand | 60 GW | Up to 82.5GW |
| *Total installed generating capacity (i.e. still includes gas generation)* | *108 GW* | *Up to 227 GW* |
| Low carbon and renewable energy installed capacity | 52 GW (48%) | Up to 162 GW (71%) |
| Total storage capacity | 4 GW | Up to 58 GW (including vehicle to grid capability) |

1. Work undertaken by both National Grid (Future Energy Scenarios) and UK Fires (a research-based consortium led by University of Cambridge) indicates that the UK will require around four times as much renewable energy as we currently have if it is to meet the 2050 net zero requirement.
2. Current planning policy is generally supportive of renewable energy, but there is no obligation to provide renewables and some changes to regulations (such as the 2016 Energy Act) and the removal of supporting subsidies has meant that there is almost no new onshore wind development in England. Solar PV is limited to certain areas of the country with lower quality agricultural land. A practical limit on growth is that the choice of locations for schemes are driven to a very significant extent to available capacity on the electricity grid.
3. The lockdown measures associated with Covid-19 have had a short-term effect on UK energy demand. This has resulted in there being no requirement for coal fired generation throughout April and May.
4. When electricity production exceeds demand, National Grid manages this by paying power consumers to increase and paying power generators to stop generating. Historically this has been invisible with the coal and gas power stations coming offline. In more recent years the sight of idle wind turbines has often led to a misconception that they are broken or not working, when they are, in reality, performing the vital function of grid balancing. Covid-19 economic impacts are unlikely to lead to a significant long term shift in demand patterns, and even if they do, it will still not offset the need for more renewable energy as the gas fired power stations still need to be decommissioned to achieve net zero.

**Strategic questions for local government**

1. If the UK is to meet its legally binding net zero target, then there is a need to accommodate a significant additional quantity of onshore renewable energy generation and storage. To a very significant extent the locations for renewable energy schemes are driven by the location of available capacity to connect to the electricity grid. In forming a view as to how to support the deployment of the additional energy generation Members are invited to consider the following areas, to be discussed in more detail at the meeting:
   1. The impact of the current planning framework and whether that may need to change to recognise the challenge of scaling up renewables and providing the necessary infrastructure
   2. Community engagement, and balancing off public support for the principle of renewable energy with local opposition
   3. Competing demands for land use and how this will affect the development of renewables
   4. Community energy ownership is actively encouraged, but largely only benefits those who can afford to invest and is unlikely to deliver at either the scale or pace required to meet the challenge. Should these schemes be prioritised?
   5. Most renewable energy developments are not subject to developer contributions (s106 or Community Infrastructure Levy) contributions – but instead rely on a vaguer requirement for community contributions. Is this the best approachfor local areas? For example, an alternative would be to have a local levy on schemes (or increase the business rates) and ring fence this for local greenhouse gas reduction and fuel poverty alleviation measures.
   6. The electricity grid is a major constraint to development. What levers or additional powers could be used to unlock investment?
2. Implications for Wales
3. The Welsh Assembly has set its own strategy for decarbonising energy generation in Wales. We will share the findings with the Welsh LGA although some aspects may not be applicable due to devolved powers. Jo brings her experience of working with local authorities in Wales in a previous role.

Financial Implications

1. This activity is within the scope of the current work programme. No financial implications have been identified.

Next steps

1. Local Partnerships hs prepared a draft discussion document setting out the issues above in detail. Following the Board meeting we will review and publish the discussion paper.
2. Members are invited to consider:
   1. Whether any key messages on decarbonising the grid should be developed and communicated as part of broader climate emergency asks
   2. Whether they wish to direct officers to undertake any further work or activity, noting the competing pressure from other priority work areas