

# GRID CONSTRAINTS IN THE SOUTH WEST: HOW THE LEP COULD RESPOND: EXECUTIVE SUMMARY



REGEN SW

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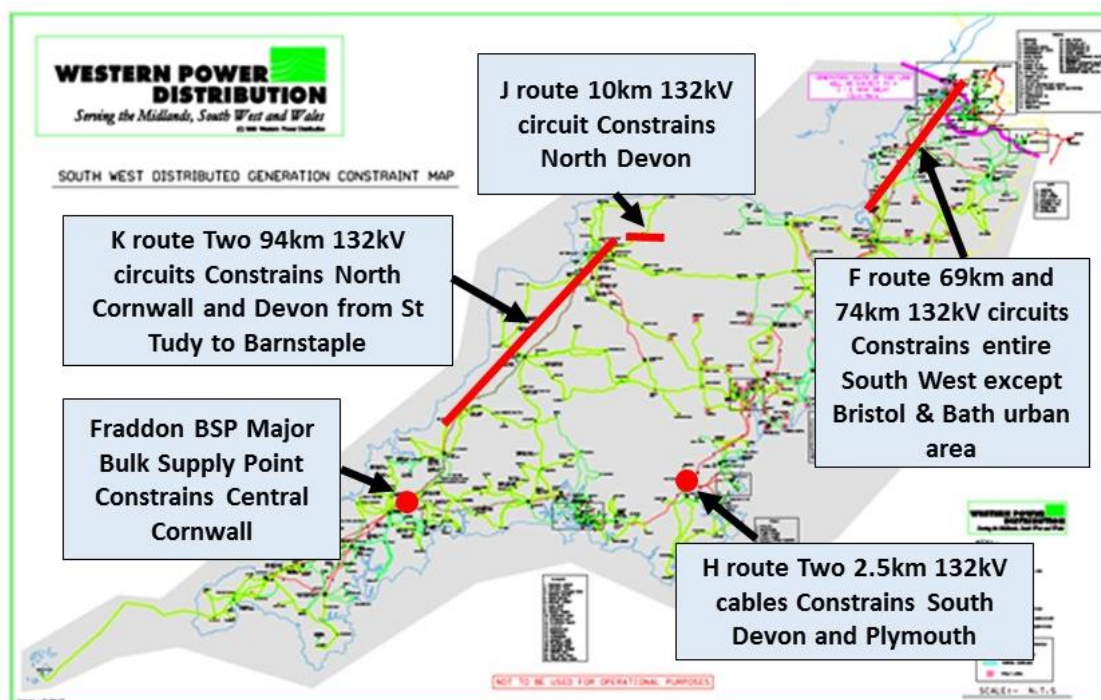
## CONTEXT

The rapid growth of distributed renewable energy in the past five years, particularly of solar photovoltaics, has caused extensive constraints on the grid network.

Where a new development requires reinforcements to the grid, much of the cost falls on that development. This can affect whether or not developments go ahead. This is especially prevalent in the south west of England, and the Heart of the South West (HOSW) LEP area, due to the volume of distributed energy projects connecting to the network. A range of businesses throughout the supply chain, including developers, communities, farmers, and SME's have told the Heart of the South West LEP that this is a significant economic barrier to development.

There is a particular constraint on the 'F' route grid line, that runs from Bridgwater Grid Supply Point (GSP) to Seabank GSP (in the Bristol docks area) has reached full capacity. The consequence is a delay of 3-6 years for new connection offers to all generation projects seeking to connect to the grid requiring works at High Voltage (HV) level i.e. above 6.6kV or 11kV. However, once this constraint is resolved there will still be other constraints across the network. See the HOSW LEP [grid constraint briefing paper](#) for further details.

**Figure 1: Current grid constraints in south west England**



There are a range of options to address grid constraints. One is to reinforce the network at key points. However, there are also opportunities for ‘smarter’ use of the existing infrastructure. Broadly the need for grid reinforcement is driven by the extent to which a new connection adds to the peak power generation on the network and whether this exceeds the remaining capacity. If a new connection can avoid adding to the peak then reinforcement can be avoided. To achieve this, the network needs to be managed in a different way than it has been in the past, with increased use of sources of flexibility.

The following provides suggestions to the Heart of South West (HOSW) LEP regarding actions that can be taken to support the unlocking of the grid in the south west, supporting local economic benefit.

**This document is intended to be read in conjunction with the Heart of South West (HOSW) grid briefing paper on alternative connections [here](#)**

**Figure 2: Summary of Heart of South West (HOSW) LEP suggested actions**

<b>Areas of influence</b>	<b>Suggested LEP action</b>
<b>Cross Local Economic Partnership (LEP) position</b>	Develop a ‘shared position’ on grid constraints with both Cornwall and West of England LEPs across the Western Power Distribution (WPD) ‘south west’ licence area
	Raise grid constraints with the LEP network with a view to a common position being articulated to Ofgem
<b>Representation</b>	Alongside partner LEPs, respond to the <a href="#">forthcoming Ofgem consultation</a> on overcoming grid constraints
<b>Information</b>	Help publicise to businesses within the LEP area the options that are still available to them to connect to the grid
<b>Innovation</b>	Focus innovation funding streams on smart technology and flexible approaches to using power locally, such as energy storage, demand side response, local supply options and smart grids/meters

## 1 Cross Local Economic Partnership (LEP) position

Due to the nature of the distributed energy grid, constraints across the network are not isolated to geographical LEP areas. Upstream constraints within the south west region have an impact on areas on the other end of the region, i.e. grid constraints on a line that runs to Bristol docks are currently restricting grid connections in Devon and Cornwall. Distributed Network Operators (DNOs) work over licence areas which cross County and LEP boundaries.

The HOSW LEP will have a stronger and more coherent voice if it works with other LEPs in WPD's south west licence area to engage constructively with DNOs and the regulator, Ofgem. Cornwall and Isles of Scilly LEP has an Energy and Resilience Board as part of its devolution deal that is working on options for improving grid capacity and adding storage.

### Suggested action

HOSW LEP to develop a 'shared position' on grid constraints with both Cornwall and West of England LEPs across the Western Power Distribution (WPD) 'south west' licence area. This could include creating a joint LEP energy and resilience board

Given that grid constraints are an issue that is increasing across the country it would also be sensible for HOSW LEP to raise this issue with the LEP network.

### Suggested action

HOSW LEP to raise grid constraints with the LEP network with a view to a common position being articulated to Ofgem.

## 2 Representation

In February 2015, Ofgem, the energy industry regulator, released a consultation on 'Quicker, more efficient grid connections' which looked to gather evidence from stakeholders and DNOs on how to tackle grid constraints (Regen SW's response on behalf of south west businesses can be found [here](#)) The outcome of the consultation was a 'next steps' report from Ofgem, released in September 2015, which can be found [here](#) followed by an update [here](#). In summary Ofgem have asked DNOs to come forward with a range of different approaches to overcoming grid constraints and has now reported on progress. These include trialling ways of carrying out strategic reinforcements

and sharing the costs and risks. WPD has proposed two trials to Ofgem (neither of these are in the south west licence area).

We have spoken to Ofgem and they confirm they are expecting to issue a further consultation on how DNOs are responding to constraints in their licence areas. This consultation, when released via the Ofgem website [here](#), is an opportunity for the HOSW LEP, alongside partner LEPs, to highlight the importance of the grid constraint issues in the south west.

#### **Suggested action**

HOSW LEP, alongside partner LEPs, should respond to the forthcoming Ofgem consultation on overcoming grid constraints. The LEP could stress the importance of overcoming these constraints to local businesses. The LEP could also offer to WPD to look for opportunities for businesses and the public sector to review cost and risk sharing options to reinforce the grid.

### **3 Information**

There are still options available for businesses to connect to the distributed energy network. Whilst these options are provided in detail on the WPD website, it is clear that a proportion of businesses in the south west have taken the simple message, i.e. there is no longer any grid capacity available, and have ceased or postponed their development plans. The LEP could play a constructive role in ensuring clear messaging to the business community.

#### **Suggested action**

The HOSW LEP to help publicise to businesses within the LEP area the options that are still available to them to connect to the grid, particularly alternative grid connection offers. This can be done using our Grid Briefing paper [here](#) and the WPD website [here](#).

### **4 Innovation**

Simply reinforcing network infrastructure to cope with peaks of generation onto the network will form only part of the solution to alleviating grid constraints in the future. Whilst this will be part of the answer, DNOs are being

encouraged to consider smarter and more flexible approaches to maximising the value of the existing infrastructure. This is part of the shift from Distribution Network Operators to Distributed Service Operators (DSO) and WPD is already rolling out measures such as Alternative Network Connections.

Other approaches include the potential of energy storage, for example to store solar generation in the day and release during the evening when demand peaks. There is also increasing focus on shifting demand. For example WPD's [Sunshine Tariff trial](#), project managed by Regen SW, is testing whether a community group can help shift demand away from the evening to when the sun is shining.

The development of such technologies and new business models has huge potential, bringing in new communication technologies and the ability to process big data. By taking a leading role in 'smart grids', HOSW could not only address grid constraints but also make itself a centre of the development of the smart energy system of the future.

Available funding streams such as EU Structural Investment Funds should be targeted at these 'flexible' approaches. The current approach of broad calls with priority areas is highly unlikely to lead to effective projects in an area that is being targeted internationally. Designing and the commissioning specific projects that build on existing comparative advantages in the HOSW would be required.

### **Suggested action**

HOSW LEP to focus innovation funding streams on smart technology and flexible approaches to using power locally, such as energy storage, demand side response, local supply options and smart grids/meters

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