

# Investing in the electricity network

Worcester 2017/18



**WESTERN POWER**   
**DISTRIBUTION**

*Serving the Midlands, South West and Wales*

# Contacts in your area

## **Birmingham:**

### **Kester Jones**

0121 325 9477

[kjones1@westernpower.co.uk](mailto:kjones1@westernpower.co.uk)

Beacon House, Long Acre, Birmingham, B7 5JJ

## **Gloucester:**

### **Neil James**

01452 651248

[najames@westernpower.co.uk](mailto:najames@westernpower.co.uk)

Saw Mill End, Corinium Avenue,

Gloucester, GL4 3BH

## **Hereford & Ludlow:**

### **Nigel Sweet**

01432 349111

[nsweet@westernpower.co.uk](mailto:nsweet@westernpower.co.uk)

Unit 1, Skylon View, Vincent Carey Road,

Rotherwas Industrial Estate, Hereford, HR2 6LB

## **Stoke:**

### **Andy Pickering**

01782 403700

[apickering@westernpower.co.uk](mailto:apickering@westernpower.co.uk)

234 Victoria Road, Fenton,

Stoke-on-Trent, ST4 2JA

## **Telford:**

### **Andy Barton**

01952 601160

[abarton@westernpower.co.uk](mailto:abarton@westernpower.co.uk)

Units 2 & 3, Epic Park, Halesfield 6, Telford,

Shropshire, TF7 4RQ

## **Tipton:**

### **John Kendrick**

0121 224 1991

[jkendrick@westernpower.co.uk](mailto:jkendrick@westernpower.co.uk)

Toll End Road, Tipton, West Midlands, DY4 0HH

## **Worcester:**

### **Michael Wigmore**

01905 383017

[mwigmore@westernpower.co.uk](mailto:mwigmore@westernpower.co.uk)

Blackpole Road, Worcester, WR4 9TB



# Meet your local team



I'm Mike Wigmore, the Distribution Manager for Worcestershire. We cover an area from the south of Birmingham down to Strensham and from Far Forest across to Banbury, which includes the city of Worcester, Evesham, Kidderminster, Bewdley, Stratford, Banbury, Malvern, Bromsgrove and Redditch. The Worcestershire network is a variety of urban and rural, comprising over 3,600km of overhead line and 1,700km of underground cables, which we aim to keep working efficiently in order to keep the lights on for our 350,000 customers.

I lead a team of 200 staff, which includes craftspeople, planners, wayleaves officers, engineers and a new intake of apprentices every year. We are located in Blackpole Road, Worcester, WR4 9TB. If you wish to discuss our investment with me, or my team, please get in touch using the details opposite.

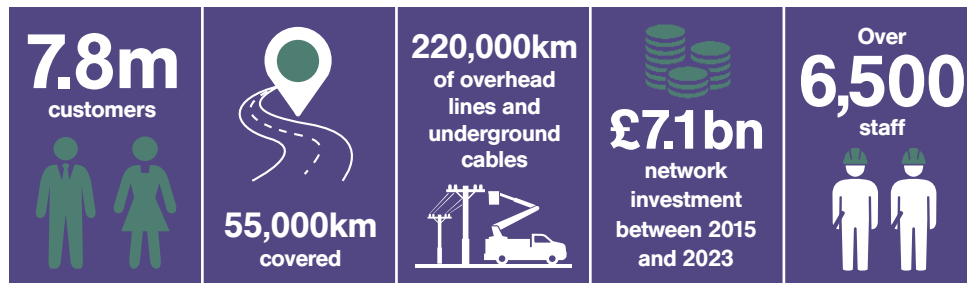
## Why I am writing to you

Western Power Distribution (WPD) is investing £7.1 billion in the electricity distribution network between 2015 and 2023. This investment will go into reinforcing the existing network, improving network reliability, providing additional capacity and upgrading equipment.

We want to make sure that all of our stakeholders are aware of the changes and improvements being made, particularly in their local area.

This brochure details the investment in the Worcestershire electricity network that WPD is making and specifically some of the local projects that are being undertaken by my team this year.

## Western Power Distribution has:



# Who we are and what we do

Western Power Distribution (WPD) is a Distribution Network Operator (DNO). This means we are responsible for the network of underground cables, overhead lines and substations that distribute electricity to customers' homes and businesses every day.

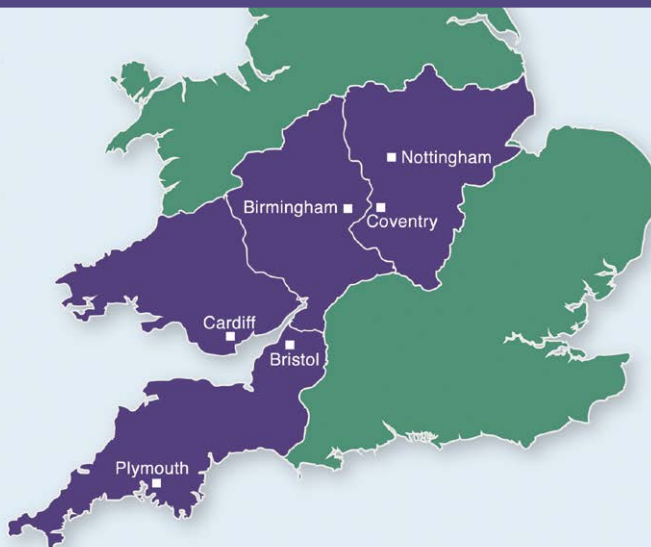
## Our key responsibilities

- Operate the distribution network assets effectively to keep the lights on.
- Maintain our assets to ensure they remain in a reliable condition.
- Fix our assets if they get damaged or are faulty.
- Upgrade the existing networks or build new ones to provide additional electricity supplies and capacity for our customers.
- We are not an electricity supplier (the company who looks after your meter and sends bills).



## Where we operate

WPD covers the East and West Midlands, South West England and South Wales. In the West Midlands we have depots in Birmingham, Telford, Gloucester, Tipton, Hereford, Worcester and Stoke.





## WPD investment

Our network covers densely populated residential areas and widely dispersed rural communities, from the Wash in Lincolnshire down through South Wales and to Land's End and the Isles of Scilly in Cornwall. The diversity of our network can cause a variety of issues across the distribution area. This, combined with the age of the network (a large proportion of our assets were built in the 1960s) and recent environmental challenges, means we will need to invest more than ever to keep our network efficient and reliable in order to keep the lights on.

Our business plan outlines our investment commitments until 2023 and was submitted to our regulator, the Office of Gas and Electricity Markets (Ofgem), in 2015. WPD was the only

DNO out of six in the UK to have its Business Plan 'fast-tracked'. This allowed us to maximise and secure our investment funding early. In 2015-2023 we have committed to investing £7.1 billion in our network while reducing charges to customers by an average of 13%. This results in a total investment of £2.11 billion in the West Midlands network.

In 2018, WPD is investing  
approximately

**£19 million**

in Worcestershire

# Project types

Due to the diversity of our network, various issues arise which must all be dealt with. This requires a range of engineering solutions to keep our network running. These solutions can be categorised as follows:



## Asset replacement

Directly changing our network assets, usually due to condition or age.



## Reinforcement

Upgrading of our network to deal with increased demand.



## Cable undergrounding

Replacing an overhead line with an underground cable for either safety or environmental reasons.



## Worst served customers

Improving the network for those with the most outages (over 12 outages in three years).



## Resilience

Mitigating against the effects of adverse weather; building flood defences, tree trimming, etc.



## Cable diversions

Moving the cable in the ground due to new building works.



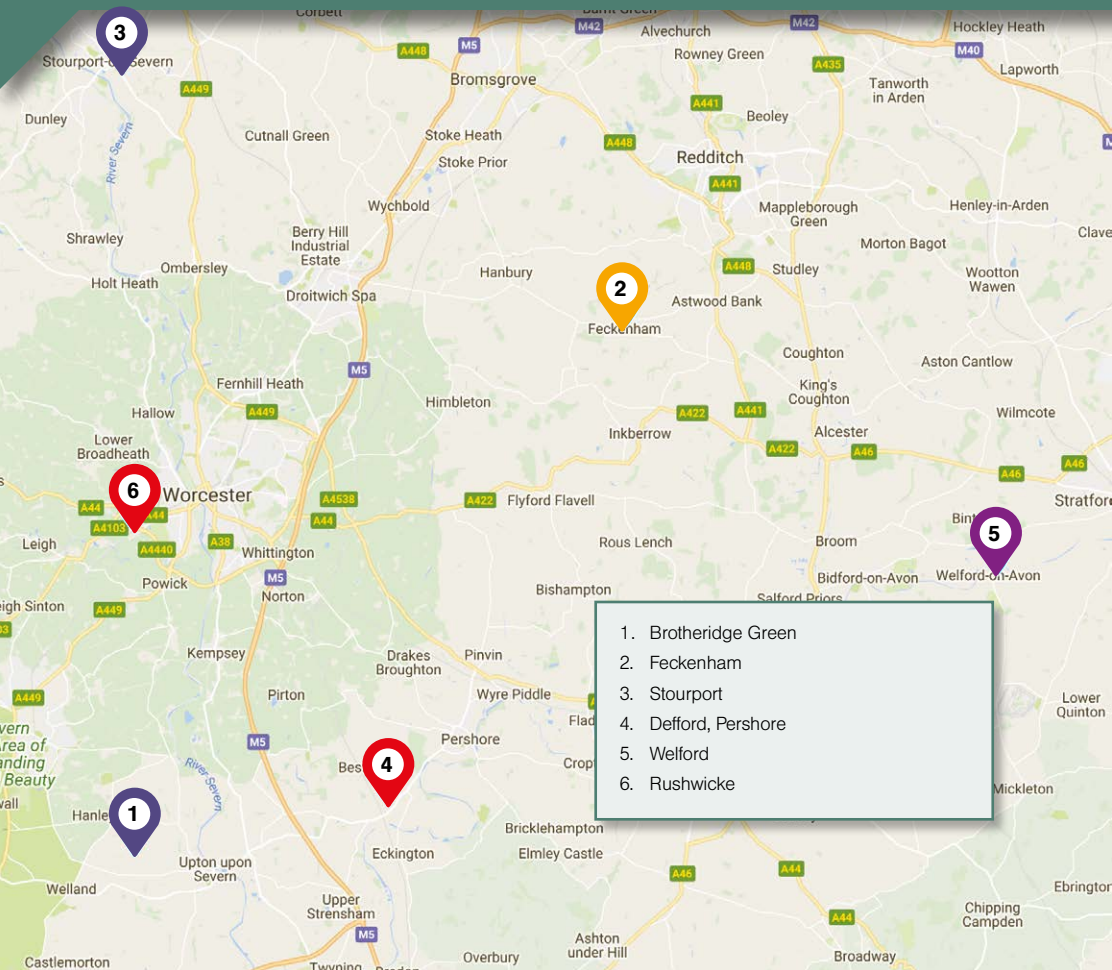


# Project locations

WPD is constantly carrying out works to maintain and improve the network, yet the large one-off projects that we commission by looking at the entire network tend to get reported more often. However, we believe that the smaller, local projects are just as important and therefore could be reported to the customers affected in the local area.

This brochure will detail a selection of the projects that are planned and being completed in 2017 and 2018 in the Worcestershire area.

The map below shows the locations of 2017/18 projects in our Worcestershire region. For information on works in the rest of the WPD area, please visit our website.



# Projects in Worcestershire

## Worcester City

### Brotheridge Green



**Total spend:** £511,000

**Customers affected:** 3,900

**Start quarter:** Q1 2017

**End quarter:** Q2 2017

**Duration:** 4 months

**Details:** After a routine inspection of the 66kV single circuit overhead line from Brotheridge Green to Tewkesbury, it was identified that 150 heavy construction poles had come to the end of their working life. Land owners were approached and once permissions were gained the poles were replaced over a two-month period.

**Customer benefits:** The replacement poles offer greater reliability and network security.

### Defford, Pershore



**Total spend:** £60,000

**Customers affected:** 70

**Start quarter:** Q3 2017

**End quarter:** Q3 2017

**Duration:** 2 months

**Details:** It was identified that a section of 11kV underground network serving 70 customers would be vulnerable in fault conditions. The network has been improved with a new piece of switchgear being installed and the replacement of over 200m of 11kV underground cable.

**Customer benefits:** The new switching arrangements have improved the supply reliability and reduced outages.

### Rushwicke



**Total spend:** £30,000

**Customers affected:** 3,900

**Start quarter:** Q4 2016

**End quarter:** Q1 2017

**Duration:** 2 months

**Details:** Upgrade 11kV switchgear and reconfigure underground network to enable automated switches to be installed on the network.

**Customer benefits:** The time to restore customers' supplies has been greatly reduced in the event of a fault on the 11kV network.





# Projects in Worcestershire



# Projects in Worcestershire

## Redditch

### Feckenham



**Total spend:** £441,000

**Customers affected:** 6,100

**Start quarter:** Q1 2017

**End quarter:** Q4 2017

**Duration:** 9 months

**Details:** Following multiple interruptions on a 66kV overhead circuit between Feckenham and Evesham, it was identified that buzzards were causing the problem. Rather than completely redesigning the towers, we developed a conductor shroud to prevent the interruptions and fitted the shrouds to 150 towers along the line.

**Customer benefits:** The new shrouds have proved 100% successful and have stopped the short interruptions.

## Kidderminster

### Stourport



**Total spend:** £894,000

**Customers affected:** 5,000

**Start quarter:** Q1 2017

**End quarter:** Q2 2017

**Duration:** 3 months

**Details:** During the first quarter of 2017 2.8km of old 33kV oil-filled cable was replaced with modern cable. We faced a number of challenges along the cable route, crossing the River Severn and the canal and major traffic congestion in the town centre. We held a number of drop-in sessions in Stourport to engage with the general public.

**Customer benefits:** The new cable will reduce faults and offer a secure network between Stourport, Wribbenhall and Kidderminster.



# Projects in Worcestershire



# Projects in Worcestershire

## Evesham

### Welford



**Total spend:** £120,000

**Customers affected:** 390

**Start quarter:** Q2 2017

**End quarter:** Q2 2017

**Duration:** 3 months

**Details:** To reinforce the high voltage network, 1,300m of 11kV cable has been installed to link Welford to Stratford circuits.

**Customer benefits:** The interconnection offers an alternative feed to customers if required.



# Major projects in the West Midlands

## Worcestershire

### Worcester-Redditch & Worcester-Evesham



**Total spend:** £12.5m

**Customers affected:** 95,600

**Start quarter:** Q2 2014

**End quarter:** Q2 2018

**Duration:** 4 years

**Details:** Installation of a new 21km cable between Feckenham Grid Supply Point and Evesham Bulk Supply Point to ensure network compliance. Works were completed at Feckenham and Evesham to accommodate the new cable.

**Customer benefits:** Improves network security and reliability as well as increasing capacity for future network connections.

capacity for generation connections. This was done by installing a new switch house and replacing the old outdoor oil circuit breakers with indoor gas-insulated circuit breakers.

**Customer benefits:** Increases the fault level capacity, which gives new customers the ability to connect distributed generation to the network. Improves the security, resilience, and flexibility of the network.

## Telford

### Telford



**Total spend:** £2.3m

**Customers affected:** 43,000

**Start quarter:** Q4 2016

**End quarter:** Q4 2017

**Duration:** 1 year

**Details:** Increasing the fault level rating at the Bulk Supply Point to alleviate equipment stress with the additional benefit of increasing network

## Hereford and Ludlow

### Ludlow



**Total spend:** £1.7m

**Customers affected:** 8,000

**Start quarter:** Q4 2015

**End quarter:** Q4 2017

**Duration:** 2 years

**Details:** Installing a new transformer and 33kV board to improve the network security and capacity.

**Customer benefits:** Increased network resilience. Increased flexibility and operability at 33kV.



# Major Projects in the West Midlands

## Birmingham

### *Birmingham South West*



**Total spend:** £2.87m

**Customers affected:** 14,800

**Start quarter:** Q1 2017

**End quarter:** Q2 2018

**Duration:** 15 months

**Details:** A new transformer and switch room is to be installed to increase the network capacity and security.

**Customer benefits:** Increased network security and resilience. Increases the available capacity at Selly Oak.

### *Birmingham South West*



**Total spend:** £3.2m

**Customers affected:** 17,800

**Start quarter:** Q1 2015

**End quarter:** Q3 2017

**Duration:** 30 months

**Details:** Replacement of both transformers at Solihull was needed due to asset condition. The decision was made to replace them with larger capacity transformers to improve the firm capacity of Solihull.

**Customer benefits:** Improve network resilience. Increasing network capacity for future connections.

## Gloucester

### *Chipping Sodbury*



**Total spend:** £1.06m

**Customers affected:** 21,576

**Start quarter:** Q2 2017

**End quarter:** Q4 2018

**Duration:** 18 months

**Details:** Rebuild of the existing 7km Oxbridge-Alveston 33kV circuit to increase the internal rating from 24MVA to 40MVA.

**Customer benefits:** Improve network resilience. Increasing network capacity for future connections.

## Stoke

### *Stoke West*



**Total spend:** £0.8m

**Customers affected:** 5,396

**Start quarter:** Q1 2018

**End quarter:** Q2 2019

**Duration:** 15 months

**Details:** Replacement of both transformers at Goldenhill Bank with larger units to increase capacity for future network connections.

**Customer benefits:** Improve network resilience. Increasing network capacity.





# Innovation Projects in the West Midlands

## Electric Nation



Electric Nation is the world's biggest electric vehicle project, running throughout the WPD area. The main aim is to investigate the use of Electric Vehicles (EVs) and their impact on the electricity network. It will trial an innovative managed

charging system allowing control over charging at peak times.

### As the EV market increases in the UK, WPD is looking to:

- understand the effects on the network of charging various vehicle and battery types.
- understand how vehicle usage affects charging behaviour.
- evaluate the reliability and acceptability to owners of EVs of demand control services and the influence these have on charging behaviour.

Participating EV owners will be trialling a smart charging system that will control the demand from electric vehicles in the event of their load on the local electricity network being too high.

The project began in April 2016 and will run until October 2019. For more details please visit the website: [www.electriconation.org.uk](http://www.electriconation.org.uk)

## ENTIRE/Flexible Power



Project ENTIRE focuses on the use of Demand Side Response (DSR) to help manage the network more efficiently. DSR involves customers adjusting their usage to help the network. Where cost-effective, DSR can help defer or avoid reinforcement, reducing costs for customers.

ENTIRE aims to address the conflicts between DNO requirements and those of other parties such as National Grid. To achieve this, WPD will develop new systems and contracts with commercial customers to provide benefits to the network under its Flexible Power brand. Customers will also be encouraged to seek alternative revenue sources when not required by WPD, either independently or through WPD's managed service. This focus on stacking revenues should increase the value for participants while reducing the cost to the wider customer base.

The project will run along the M1- M40 corridor, with completion expected in 2020. More details can be found at [www.flexiblepower.co.uk](http://www.flexiblepower.co.uk)



To report a power cut, call us on:

**0800 6783 105**



Tweet us: @wpduk



Facebook: Western Power Distribution



Email: [info@westernpower.co.uk](mailto:info@westernpower.co.uk)



[www.westernpower.co.uk](http://www.westernpower.co.uk)

**POWER CUT?  
CALL 105**



Western Power Distribution (East Midlands) plc, No2366923

Western Power Distribution (West Midlands) plc, No3600574

Western Power Distribution (South West) plc, No2366894

Western Power Distribution (South Wales) plc, No2366985

Registered in England and Wales, Registered Office:  
Avonbank, Feeder Road, Bristol, BS2 0TB

