

# Investing in the electricity network

Northampton & Milton Keynes 2017/18



**WESTERN POWER**   
**DISTRIBUTION**

*Serving the Midlands, South West and Wales*

# Contacts in your area

## Chesterfield & Mansfield:

### Pat Bates

01773 543543

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

Grange Close, Clover Nook Industrial Estate,  
Alfreton, DE55 4QT

## Derby:

### Simon Havill

01332 276611

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

Unit 11 Victory Park, Victory Road, Derby,  
DE24 8EP

## Nottingham:

### Dave Hewitt

01158 504200

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

Harrimans Lane, Lenton Lane Industrial Estate,  
Nottingham, NG7 2SD

## North Lincolnshire:

### Mark Hutchinson

01522 517692

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

Units B-E Deacon Road Industrial Estate,  
Lincoln, LN2 4JB

## South Lincolnshire:

### Ian Brooks

01476 863086

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

Isaac Newton Way, Alma Park Industrial Estate,  
Grantham, NG31 9SD

## Coventry & Warwickshire:

### Trevor Richards

01455 232246

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

Hammonds Way, Hinckley, Leics, LE10 3EQ

## Leicester & Kettering:

### Colin Randle

01536 311187

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

Robinson Way, Kettering, NN16 8PT

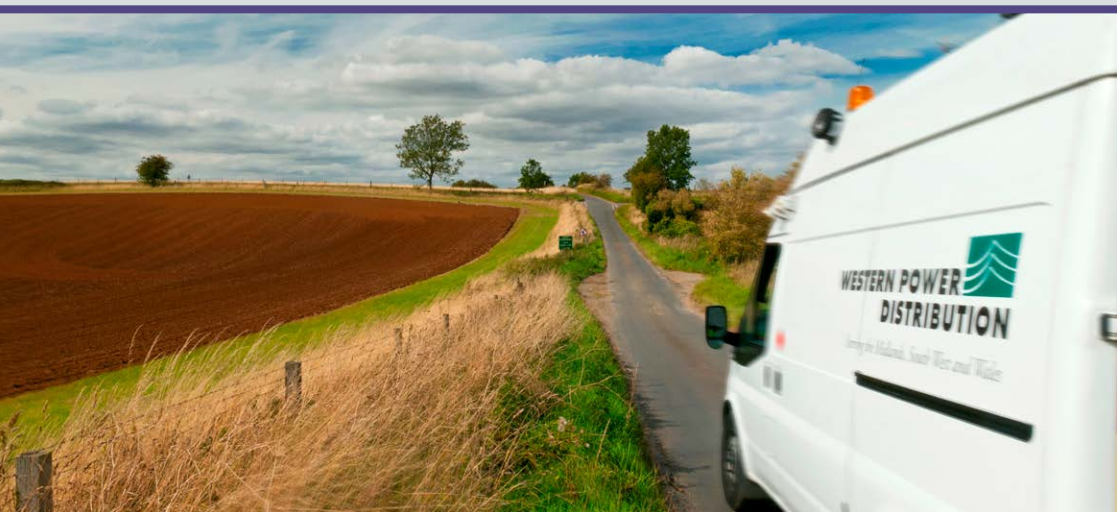
## Northamptonshire & Milton Keynes:

### Justin Hargate

01604 875511

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

5 Kilvey Road, Brackmills, Northampton,  
NN4 7BQ



# Meet your local team



I'm Justin Hargate the Distribution Manager for Northamptonshire & Milton Keynes. We cover an area which includes Northampton, Milton Keynes, out to Buckingham and across to Daventry.

The Northants & Milton Keynes network is a mixture of urban and rural areas, which we aim to keep working efficiently in order to keep the lights on for our 312,000 customers. I am in charge of a team of 135 staff which includes craftspeople, planners, wayleaves officers, engineers and a new intake of apprentices every year.

We are located at 5 Kilvey Road, Brackmills Industrial Estate, Northampton, NN4 7BQ. If you wish to discuss our investment with me, or my team, please get in touch using the details opposite.

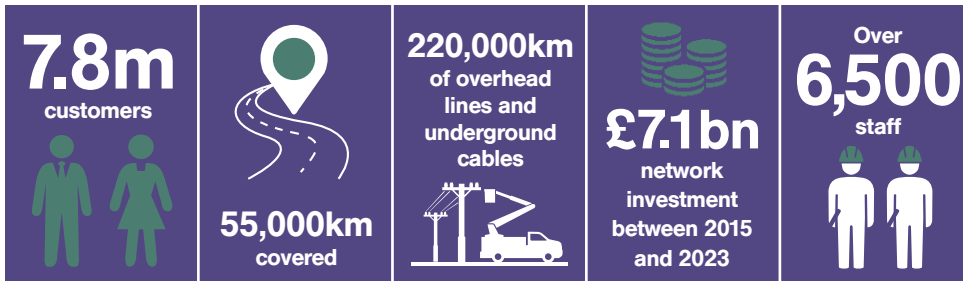
## Why I am writing to you

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 to the Northampton and Milton Keynes 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 East Midlands, we have depots in Alfreton, Derby, Nottingham, Lincoln, Grantham, Leicester, Kettering and Northampton.





## 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 1960s) and recent environmental challenges, mean 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 Energy 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 £2.13 billion in the East Midlands network.

Between 2015 and 2023,  
WPD is investing

# £12 million

in Northampton and Milton Keynes

# 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 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.

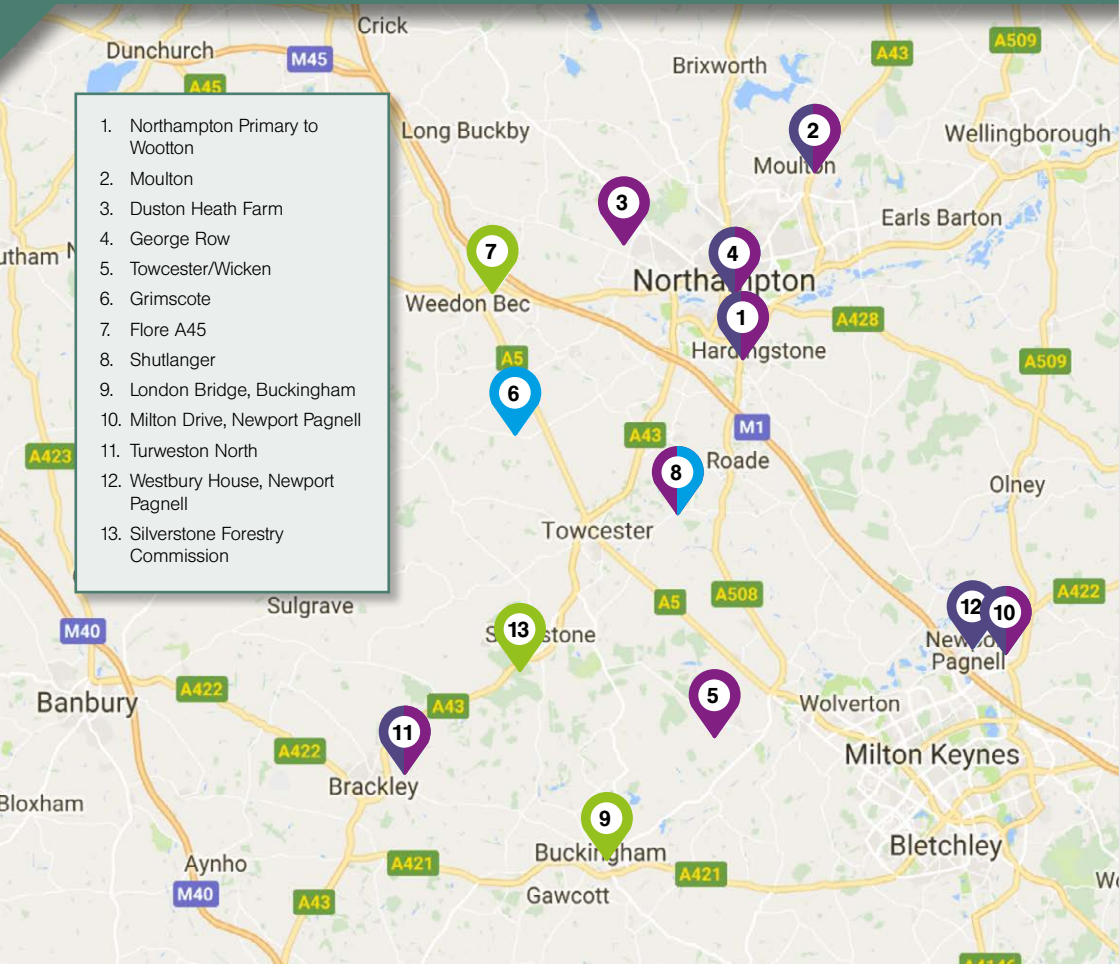


# Project locations

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 Northampton and Milton Keynes area. The map below shows the locations of those projects.

For information of works in the rest of the WPD area, please contact us or visit our website.



# Projects in Northampton & Milton Keynes

## Northampton

### Northampton Primary to Wootton



**Total spend:** £2,900,000

**Customers affected:** 400

**Start quarter:** Q3 2017

**End quarter:** Q2 2018

**Duration:** 52 weeks

**Details:** Replacement of two 33kV circuits from Northampton grid substation to Wootton primary substation to reinforce the Wootton Newport Pagnell Road new housing estates and rationalise the 33kV network.

**Customer benefits:** This project increases the capacity at Wootton in particular for the proposed housing developments around the Newport Pagnell Road area.

## Moulton



**Total spend:** £750,000

**Customers affected:** 440

**Start quarter:** Q1 2018

**End quarter:** Q4 2018

**Duration:** 40 weeks

**Details:** Replacement of approximately 2.8Km of 11kV cable and two existing substations with new.

**Customer benefits:** These works will reinforce the area and provide capacity for the new developments proposed on the east side of the Kettering Road as well as increased load in the Moulton and Broughton areas.





# Projects in Northampton & Milton Keynes

## Duston Heath Farm



**Total spend:** £12,000

**Customers affected:** 42

**Start quarter:** Q3 2017

**End quarter:** Q3 2017

**Duration:** 3 weeks

**Details:** Replacement of 500 metres of old open wire conductor and associated wooden poles.

**Customer benefits:** Will provide increased capacity and more stable supply to the area. Some tree trimming works will also be completed.

## Northampton Town Centre, George Row



**Total spend:** £68,000

**Customers affected:** 86

**Start quarter:** Q3 2017

**End quarter:** Q4 2017

**Duration:** 6 weeks

**Details:** Installation of new substation and associated HV and LV cabling. LV network to be reconfigured to alleviate overloading and customer numbers of the LV network in the area.

**Customer benefits:** Improved LV network to the St Giles St/Bridge St area with additional backfeeds provided.

## West Northants

### Towcester/Wicken



Reinforcement

**Total spend:** £5,400,000

**Customers affected:** 6,000

**Start quarter:** Q2 2017

**End quarter:** Q2 2019

**Duration:** 100 weeks

**Details:** Lay additional 33kV underground circuit from Towcester to Wicken and also upgrade Towcester/Silverstone underground/overhead network.

**Customer benefits:** Improved supply reliability and restoration times. Future load growth to Towcester and diversions to allow construction and development of Towcester.



# Projects in Northampton & Milton Keynes

## West Northants

### Grimscote



**Total spend:** £14,000

**Customers affected:** 30

**Start quarter:** Q3 2017

**End quarter:** Q4 2017

**Duration:** 6 weeks

**Details:** Undergrounding LV overhead network currently in close proximity to dwellings.

**Customer benefits:** Improved safety and visual impact of network in rural location.

### Flore A45



**Total spend:** £520,000

**Customers affected:** 1,100

**Start quarter:** Q2 2017

**End quarter:** Q2 2018

**Duration:** 48 weeks

**Details:** Diversion, removal and undergrounding of various 11kV and LV assets.

**Customer benefits:** Works will allow construction of new bypass and provide significant visual benefits to the area.

### Shutlanger



**Total spend:** £37,000

**Customers affected:** 148

**Start quarter:** Q3 2017

**End quarter:** Q4 2017

**Duration:** 20 weeks

**Details:** Replacement of existing LV overhead network together with some undergrounding throughout village.

**Customer benefits:** Improved supply reliability and quality of supply together with improved visual aspect of village.

### Adstone/Canons Ashby/ Moreton Pinkney



**Total spend:** £359,000

**Customers affected:** 8,000

**Start quarter:** Q2 2017

**End quarter:** Q4 2017

**Duration:** 34 weeks

**Details:** Replacement of 12.8km of high voltage overhead lines and 460m of high voltage overhead lines put underground.

**Customer benefits:** Improved supply reliability and quality of supply.



# Projects in Northampton & Milton Keynes

## West Bucks

### London Bridge, Buckingham



**Total spend:** £27,000  
**Customers affected:** 1,331  
**Start quarter:** Q4 2017  
**End quarter:** Q4 2017  
**Duration:** 4 weeks

**Details:** Transport for Buckingham are completing works to repair the footbridge which is corroded. WPD has cables that run under the bridge and the corrosion of the steel supports is a safety issue. WPD will work with TfB by completing a temporary diversion of the cables to enable the repair works to take place. New sections of cable will be installed back in the structure of the bridge once the supports are repaired.

**Customer benefits:** The works will improve the safety of third parties and will ensure the cables under the bridge are fit for purpose for many years to come.

### Turweston North



**Total spend:** £37,000  
**Customers affected:** 55  
**Start quarter:** Q3 2017  
**End quarter:** Q3 2017  
**Duration:** 6 weeks

**Details:** The substation plant was outdoor and in poor condition and has been replaced with modern equipment which has been protected from the elements by a glass-reinforced plastic. We have completed jointing works on the LV network to improve backfeeds.

**Customer benefits:** The installation of modern reliable switchgear will contribute to reduced faults. Installing the new equipment in glass reinforced plastic will help extend the useful life of the asset. The new transformer will have an increased capacity and the addition of LV backfeeds will reduce customer interruptions.

### Silverstone Forestry Commission



**Total spend:** £77,000  
**Customers affected:** 571  
**Start quarter:** Q3 2017  
**End quarter:** Q4 2017  
**Duration:** 12 weeks

**Details:** Underground approx 300meters of 11kV overhead line and 300meters 33kV overhead line.

**Customer benefits:** The undergrounding of the two lines will help improve network security, and have a positive visual impact on the area.



# Projects in Northampton & Milton Keynes

## Milton Keynes

### Milton Drive, Newport Pagnell



**Total spend:** £65,000  
**Customers affected:** 241  
**Start quarter:** Q3 2017  
**End quarter:** Q3 2017  
**Duration:** 4 weeks

**Details:** The substation plant was outdoor and in poor condition and has been replaced with modern equipment which has been protected from the elements by a glass-reinforced plastic (GRP). We have laid a second cable from the switchgear to loop in the connection and increase the security of supply.

**Customer benefits:** The installation of modern reliable switchgear will contribute to reduced faults and a looped connection will help reduce supply interruptions. Installing the new equipment in a GRP will help extend the useful life of the asset.



### Westbury House, Newport Pagnell



**Total spend:** £54,000  
**Customers affected:** 179  
**Start quarter:** Q3 2017  
**End quarter:** Q3 2017  
**Duration:** 2 weeks

**Details:** Replacing the existing substation with modern equipment to improve the asset condition. The substation will be repositioned to the footpath boundary improving out of hours access.

**Customer benefits:** The installation of modern reliable switchgear will contribute to reduced faults. Installing the new equipment in a GRP will help extend the useful life of the asset. Restoration times will be improved as the site can be accessed from the highway.



# Major Projects in the East Midlands

## Oakham, Lincolnshire



**Total spend:** £400,000

**Customers affected:** 800

**Start quarter:** Q1 2017

**End quarter:** Q3 2017

**Duration:** 5 months

**Details:** In February 2017, an investment of more than £400,000 was made to improve power supplies in Rutland. The scheme reinforced and renewed electricity cables in Oakham town centre. Around 2km of cables were replaced and a new substation installed at the Castle.

**Customer benefits:** This project improved the reliability of supply to nearly 800 customers.

## Sibthorpe



**Total spend:** £650,000

**Customers affected:** 1,518

**Start quarter:** Q2 2018

**End quarter:** Q4 2018

**Duration:** 6 months

**Details:** Install a new 33kV switchboard and reconfigure the network.

**Customer benefits:** Improved network performance.

## Long Eaton



**Total spend:** £800,000

**Customers affected:** 17,993

**Start quarter:** Q2 2018

**End quarter:** Q4 2018

**Duration:** 6 months

**Details:** Replace both primary transformers.

**Customer benefits:** Improved reliability of the network.

## Tamworth



**Total spend:** £2,348,000

**Customers affected:** 39,281

**Start quarter:** Q2 2017

**End quarter:** Q3 2018

**Duration:** 20 months

**Details:** Replace the 132kV Switchgear and 132/33kV transformers due to increased load in the area.

**Customer benefits:** Maintaining network within limits and allow future capacity in the network.



# Major Projects in the East Midlands

## Horncastle, Bicker Fen



**Total Spend:** £3,456,000  
**Customers affected:** 5,891  
**Start quarter:** Q2 2017  
**End quarter:** Q4 2017  
**Duration:** 7 months

**Details:** Increased loading had caused the firm capacity of the two transformer site to be exceeded. Both transformers will be replaced, the substation reconfigured and the switching and protection schemes upgraded.

**Customer benefits:** Increased reliability of the network and increased potential for further connections.

## Corby



**Total Spend:** £3,600,000  
**Customers affected:** 34,093  
**Start quarter:** Q1 2018  
**End quarter:** Q4 2019  
**Duration:** 23 months

**Details:** Replace the existing equipment due to increased load and generation.

**Customer benefits:** Generation will be able to connect to the network.

## Checkerhouse



**Total Spend:** £4,000,000  
**Customers affected:** 26,280  
**Start quarter:** Q1 2017  
**End quarter:** Q2 2018  
**Duration:** 1 year

**Details:** Connection of new generation causes issues with reverse power flow through the 132/33kV transformers at the substation. This requires the replacement of the two transformers, and the existing 33kV switchboard will also be replaced with a modern gas-insulated one.

**Customer benefits:** Future expansion of up to two further grid transformers and a new switchboard will enable the current fault level restriction to be lifted and allow accepted generation schemes to connect.

## Towcester



**Total Spend:** £1,400,000  
**Customers affected:** 6,704  
**Start quarter:** Q4 2017  
**End quarter:** Q2 2019  
**Duration:** 14 months  
**Details:** Install an additional primary transformer and half an 11kV board.  
**Customer benefits:** Maintaining network within limits and allow future capacity in the network.



# Innovation Projects in the East 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.electricnation.org.uk](http://www.electricnation.org.uk)

## ENTIRE/Flexible Power



Project ENTIRE focuses around 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 benefit 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 whilst reducing the cost to the wider customer.

The project will run in the East Midlands along the M1- M40 corridor with an aimed completion of 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