



Newport South BSP and associated 33 kV Network

Network Development Report – South Wales

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**Electricity
Distribution**

nationalgrid

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Newport South BSP and associated 33 kV Network

1. Network Overview

Newport South Bulk Supply Point (BSP) supplies an area of Newport City. An industrial legacy at the Orb Steelworks which are currently closed has left the BSP lightly loaded. A single Primary Substation (Ringlands) and several 33 kV generators are fed from the BSP.

It is supplied from two 132 kV circuits from Uskmouth GSP. Newport South BSP and its sole primary substation supplies approximately 9,100 customers.

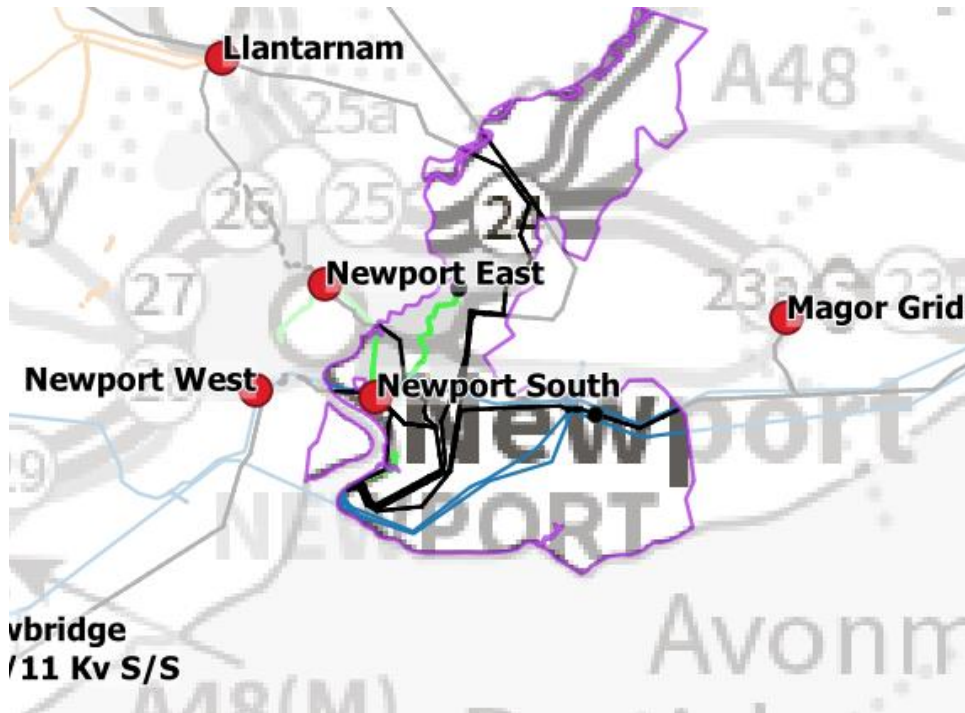


Figure 1.1 Newport South BSP geographic network coverage

This report discusses all existing and future network constraints over a 0-10 year horizon associated with the 33 kV circuits and 33/11 kV transformers which supply the Newport South BSP area. This uses the methodology outlined in the Network Development Plan Methodology Report with Network Operability Modelling applied as outlined below.

For the purposes of this analysis the NGED Best View Distribution Future Energy Scenario (DFES) has been used to study the years 2022 (baseline), 2028 and 2034, with consideration given to how proposals could change under the other scenarios. Five representative days have been studied across the four seasons: Winter Peak Demand, Intermediate Warm Peak Demand, Intermediate Cool Peak Demand, Summer Peak Demand and Summer Peak Generation.

1.1 Network Topology

The Newport South BSP network is arranged as follows:

- Two grid transformers running in parallel, one connected to each of the incoming 132 kV circuits.
- A three section 33 kV bar at the BSP.
- Ringlands Primary is fed via two 33 kV circuits.
- Further 33 kV circuits supply a several 33 kV customers and some dead ends left from former customers.

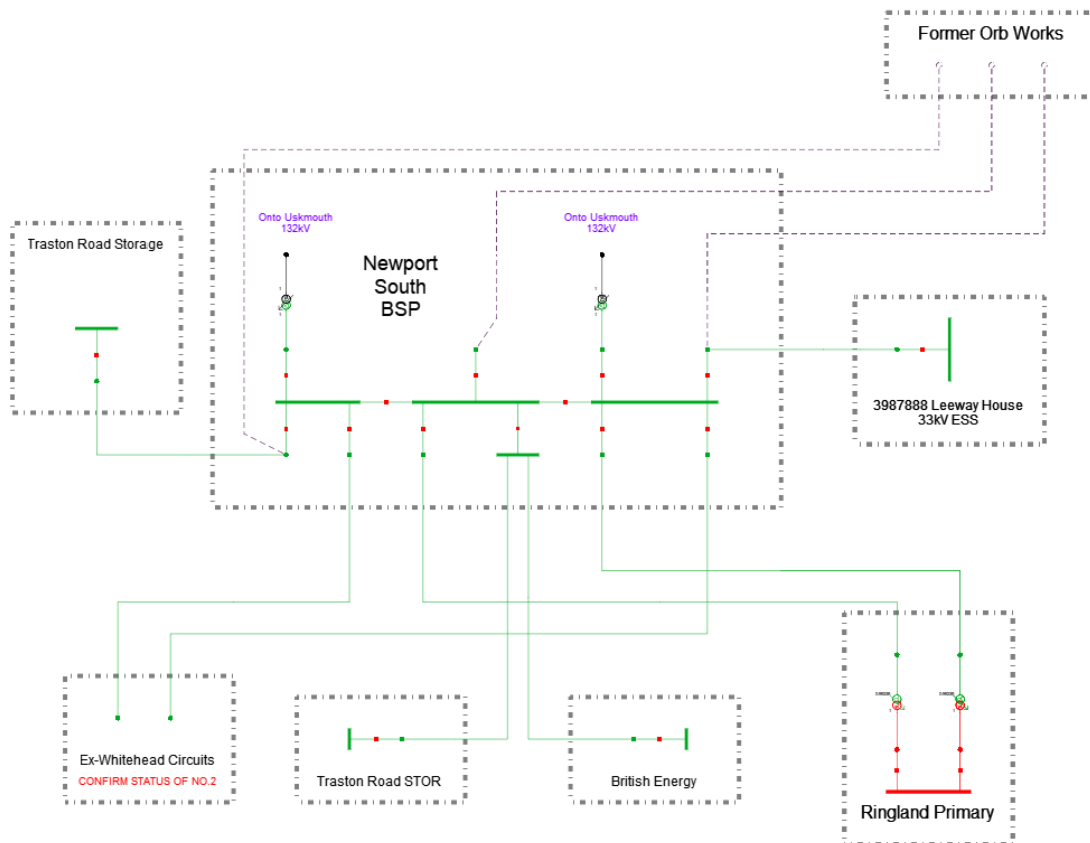


Figure 1.2 Newport South BSP Single Line Diagram

1.2 Network Operability Modelling

The following network automation and manual switching schemes have been modelled in the analysis of this area, aligning to how the network is currently operated, as well as proposed actions, to manage some constraints identified operationally.

- Newport South BSP is a recipient of intertripping signals from Uskmouth GSP, a fault seen by Uskmouth circuit breakers 105 or 905 will generally trip Newport South 1T0 or 2T0 respectively.

2. Summary of Network Constraints

The following constraints were identified for the Best View Scenario, for which mitigation options will be discussed:

- Newport South itself does not require any works to be compliant to 2034.
- Newport South will be reinforced with a new 33/11 kV Primary Substation to alleviate constraints around Newport East, see Uskmouth GSP report section 3.3 for more details.



Registered Office: Avonbank, Feeder Road, Bristol BS2 0TB
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