



**SP MANWEB**

# **The North Wales Wind Farms Connection Project**

Environmental Statement Chapter 1 -  
Introduction

Technical Appendix 1.1

Application reference: EN020014

March 2015



Regulation reference: The Infrastructure Planning  
(Applications: Prescribed Forms and Procedure)  
Regulations 2009 Regulation 5(2)(a)

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## **Environmental Statement**

### **Appendix 1.1: Proposed Works at the Existing St Asaph Substation**

March 2015

PINS Reference: EN020014

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The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 – Regulation 5(2)(a)



**The Planning Act 2008**

**The Infrastructure Planning (Applications: Prescribed Forms and Procedure)  
Regulations 2009**

**Regulation 5(2)(a)**

**The North Wales Wind Farms Connection Project**

**Environmental Statement**

**Appendix 1.1: Proposed Works at the Existing St Asaph Substation**

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# 1 INTRODUCTION

## 1.1 Overview

- 1.1.1 Under the Planning Act 2008 (the "Act") SP Manweb plc (SP Manweb) is making an application for a North Wales Wind Farms Connection Project Development Consent Order (the "DCO"). The DCO would grant powers to construct, operate and maintain a new 17 kilometre 132,000 volt (132 kV) connection from the proposed North Wales windfarm substation near Clocaenog Forest into the existing SP Manweb network at St Asaph Grid substation ("the Proposed Development"). The Proposed Development is in the administrative boundaries of Denbighshire County and Conwy County Borough in the north of Wales (see Figure 1.1 Location Plan).
- 1.1.2 The Wider Scheme includes a proposed Collector Substation at Clocaenog, a section of new underground cable from the Terminal Point to the existing St Asaph Grid substation, and works at St Asaph substation.
- 1.1.3 This Report provides information on the proposed works at the existing St Asaph substation.

## 1.2 Statutory Consents Procedure

- 1.2.1 The Act amended the existing planning system in England and Wales for consenting overhead lines. In accordance with Section 14(1)(b) of the Act, overhead lines installed above ground with a nominal voltage of greater than, or equal to, 132kV are considered Nationally Significant Infrastructure Projects (NSIPs), to be determined by the Secretary of State in accordance with the requirements of the Act.
- 1.2.2 The Secretary of State is required by S.104 of the Act to have regard to any national policy statement which has effect in relation to development of the description to which the application relates. Those relevant to the North Wales Wind Farm Connections Project are the Overarching National Energy Infrastructure Policy (EN-1), Renewable Energy (EN-3) and Electricity Networks Infrastructure (EN-5).
- 1.2.3 The proposed Clocaenog Forest substation does not form part of the application for development consent and a planning application (ref no) has been submitted to the Local Planning Authority, in this case Denbighshire County Council.
- 1.2.4 The section of new underground cable from the Terminal Point to the existing St Asaph Grid substation is likely to be permitted development for SP Manweb under the Town and Country Planning (General Permitted Development) Order 1995.
- 1.2.5 A the connection into the SP Manweb substation at St Asaph (SJ0121742) can be accommodated within the SP Manweb ownership boundary it is likely to be permitted development under Part 17 Class G of the Town and Country Planning (General Permitted Development) Order 1995.

## **1.3 Structure of the Report**

1.3.1 The report consists of the following chapters:

- Chapter 1 provides an overview of the Proposed Development and the Wider Scheme, and the statutory consents procedure;
- Chapter 2 describes the proposed works, timescales and estimated vehicle movements;
- Chapter 3 provides an overview of the potential effects.



## 2 DESCRIPTION OF WORKS

### 2.1 Introduction

2.1.1 To facilitate connection of the North Wales Wind Farm Connection Project to SP Manweb's St Asaph Grid Substation a number of modifications to the layout and infrastructure of the existing substation are required. These are indicated in red on Figure 2.1 and include:

- Relocating the existing Holywell Transformer and associated infrastructure to a spare bay within St Asaph Grid Substation;
- Installation of a 120 MVA Reactor in the bay that currently houses the Holywell Transformer;
- Installation of associated equipment for the 120MVA reactor;
- Diversion of existing cable circuits within the substation compound to facilitate the above changes; and
- Modifications to existing Protection & Control Infrastructure within the substations switchrooms.

2.1.2 Construction works associated with the above proposals will include:

- Excavation/reinstatement of cable/duct trenches;
- Excavations for structural foundations;
- Construction of reinforced concrete foundations, bund walls, bases and plinths;
- Erection of gantries/cable sealing end structures;
- Installation of electrical equipment including Reactors, Circuit Breakers, RCP Disconnectors, Post insulators, Surge arresters, Marshalling Kiosks, Protection & Control panels etc;
- Laying of electrical cables; and
- Modifications to existing substation earthing system.

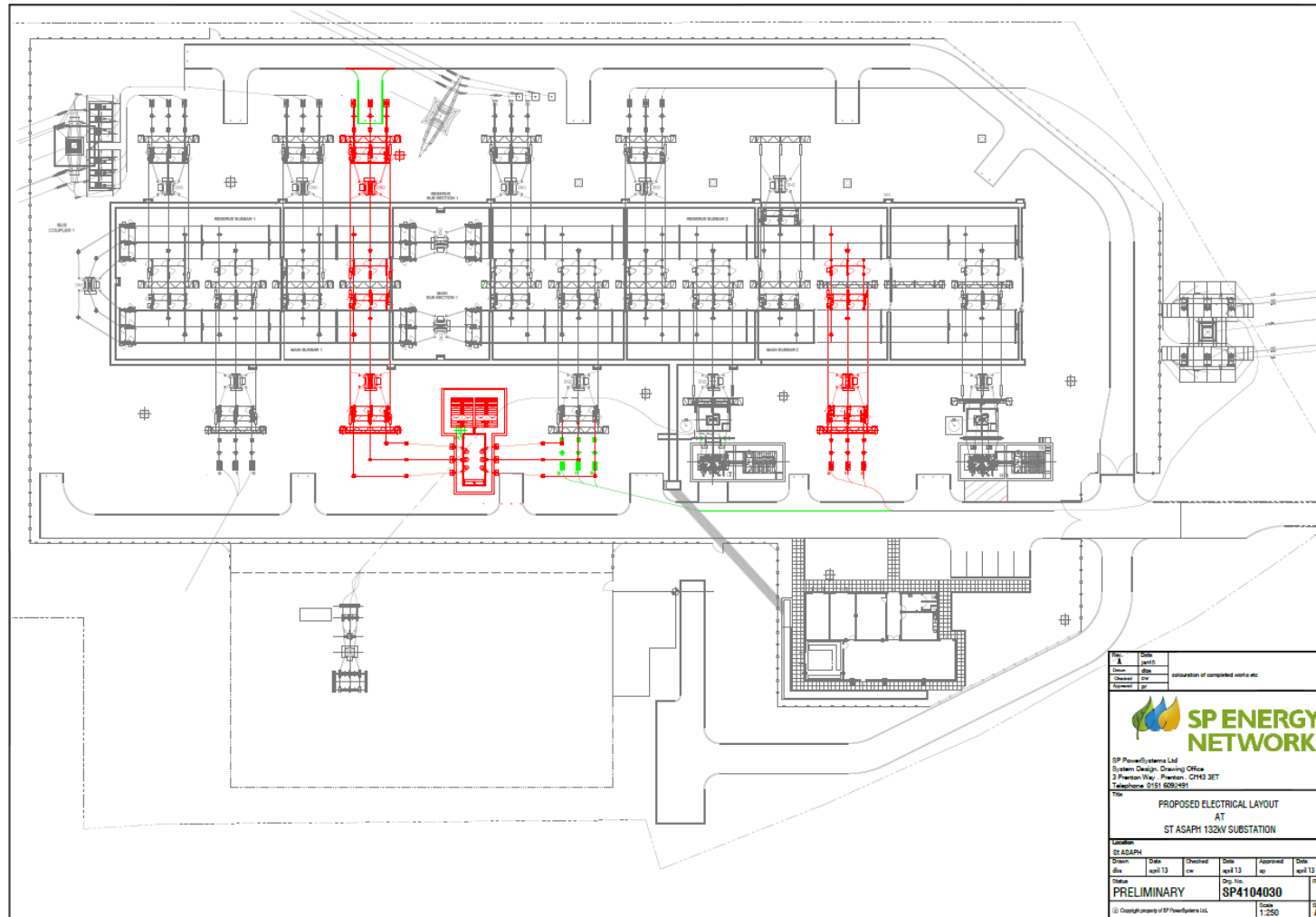
### 2.2 Key Programme Activities/Durations

2.2.1 Works are programmed to commence in June 2016 and take place within the 16 month construction period. Key activities are as follows:

- Mobilise -1.5 Months
- Undertake Civils works –3.5 Months
- Undertake Balance of Plant (BoP) installation and Building works –6 Months
- Commissioning works – 2 Months

### Figure 2.1: Revisions to the Existing St Asaph Substation

(New equipment is indicated in red)



## 2.3 Estimated Vehicle Movements

Estimated vehicle movements from/to existing highway network are as follows:

Activity / Vehicle	Visits off Highway (approx.)	Purpose
<b>General</b>		
Cars/Light Goods vehicles	2500	General access and egress of construction resource during AM and PM peak periods during 13 month construction and commissioning period (allowance made for some car sharing).
<b>Site Establishment</b>		
Low Loader to deliver/remove excavator	4	Preparation of platform for temporary welfare facilities. Delivery and placing of welfare cabins, mess room etc.
Hiab lorry	8	
Low Loader to deliver/remove 6T dumper	4	
Tipper lorry	6	
Low Loader to deliver/remove Telehandler	4	
Low Loader to deliver/remove Ride on roller	4	
<b>Civils Works</b>		
Low Loader to deliver/remove excavator	Included above	Plant and Material deliveries/excavation of foundations/erection of formwork/concrete pour/import of backfill material
Tipper Lorry	20	
Concrete Lorry	20	
Hiab/Flatbed lorry	15	
Low Loader to deliver/remove 6t dumper	Included above	
Low Loader to deliver/remove Telehandler	2	

Activity / Vehicle	Visits off Highway (approx.)	Purpose
Low Loader to deliver/remove Ride on roller	Included above	
<b>Building Works (Works within existing buildings)</b>		
Hiab/Flatbed lorry	12	Protection and Control Modifications to existing infrastructure housed within switchrooms
Delivery Vans	10	
<b>Electrical Installation and Commissioning Works</b>		
Low Loader to deliver/remove Telehandler	4	Plant/Material deliveries for electrical infrastructure works.
Low Loader to deliver Reactor	2	
Mobile Crane	4	
Hiab lorry	16	

## 2.4 Plant/Machinery for Construction

2.4.1 The table below provides a summary of the typical plant/machinery required during the construction phase of the project with outline durations for their use:

Vehicle	Duration on site	Purpose
<b>Site Establishment</b>		
Telehandler	1.5 months	Offloading and placing of welfare cabins, canteens, mess rooms etc.
Excavator	0.25 months	Excavation and levelling of platform for welfare facilities.
Dumper	0.5	General movement of excavated material or placement of aggregate for platform etc.
Ride on roller	0.25 months	Compaction of platform for welfare facilities.

<b>Vehicle</b>	<b>Duration on site</b>	<b>Purpose</b>
<b>Civil Works</b> (Inc. platform works, structural foundations, cable ducting etc.)		
360 Excavator	3.5 months	General excavation for structural foundations, drainage, ducting etc.
Dumper	2 months	General movement of excavated material or placement of aggregate.
Ride on roller	1 month	Compaction of compound platform etc.
Generator	3.5 months	Supply of electricity to welfare facilities
Compressor	2 months	For occasional use of compressed air tools to break out concrete etc.
Concrete compaction tools	2 months	Compaction of structural concrete.
<b>Substation Building Works</b>		
Small lifting equipment and hand tools	3 months	Works within existing switchrooms.
<b>Electrical Installation/Commissioning</b>		
Crane	0.5 month	Off-loading of heavy electrical plant including reactors
Mobile Elevated Work Platform (MEWP)	6 months	To gain access to install electrical infrastructure.
Telehandler	6 months	General lifting operations associated with receiving equipment deliveries and electrical installation works.
Small lifting equipment and hand tools	6 months	General works to install electrical infrastructure.

Note: Delivery vehicles will visit site on an ongoing basis throughout the duration of the project. These will include Low Loaders for reactor deliveries, flat bed Lorries for delivery of smaller electrical equipment and plant, tipper Lorries, concrete Lorries, vans etc.



## **3 OVERVIEW OF POTENTIAL EFFECTS**

### **3.1 Introduction**

3.1.1 As the proposed works are within the curtilage of the existing substation this overview considers only those effects pertinent to the construction phase:

3.1.2 It is considered that no effects will arise, either during construction or operation of the substation to:-

- Landscape and visual;
- Historic Environment; and
- Socio Economics and Tourism.

### **3.2 Ecology and Biodiversity**

3.2.1 Although the works are within the curtilage of the existing substation the measures set out within the CEMP will be adopted to ensure that should any protected species be found then appropriate measures will be adopted and licenses sought if required.

### **3.3 Flood Risk and Water Quality**

3.3.1 There is no new building proposed at the existing St Asaph Substation and as the works proposed are within the existing curtilage, with existing site drainage and pollution prevention measures.

3.3.2 The St Asaph substation is situated in a low risk flood zone and not affected by surface water. It is therefore considered that there will be no effects on flood risk or water quality likely to arise from the works at St Asaph substation.

### **3.4 Traffic and Transport**

3.4.1 Traffic effects of the Wider Scheme, including the proposed works at St Asaph substation are included within Chapter 12 'Traffic and Transport (DCO Document Ref 6.12) (Section 12.7)

### **3.5 Emissions**

3.5.1 AS the works proposed are in proximity to the works for the underground cable and a number of receptors would potentially be affected by construction of both if it occurred in parallel consideration of emissions is provided in Appendix 1.2 (DCO Document Ref 6.17)

## **3.6 EMFs Substations**

- 3.6.1 Distribution electricity substations, such as the proposed Clocaenog Collector substation and the existing grid substation at St Asaph, generally produce up to 2  $\mu$ T close to their perimeter fence and often no electric field at all. The fields fall rapidly with distance, and within 1-2m from a typical substation, the fields associated with it are usually indistinguishable from other fields present. The proposed Clocaenog Collector substation and the existing St Asaph grid substation will comply with current UK Government guidelines at all times and will be significantly within the current guidelines for permitted public exposure levels.