

APPENDIX 1B Report on Consultations

**PROPOSED REINFORCEMENT TO THE ELECTRICAL DISTRIBUTION
SYSTEM**

132kV Overhead Line between Legacy and Oswestry

Report on Consultation

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1. Executive Summary

SP Manweb (SPM) has a statutory duty and a licence obligation to develop and maintain an efficient, co-ordinated and economic system of electricity supply to its customers. To meet these requirements, SP Manweb proposes to reinforce the 132kV distribution system between Legacy substation and Oswestry substation with a new wood pole overhead electricity line. This will ensure compliance with its statutory duties and secure supplies to 80,000 customers.

Environmental consultants, The Environment Partnership (TEP), were appointed by SPM to carry out a Routeing Study prior to a full Environmental Impact Assessment for the new overhead line. The Consultation Document published in February 2007 is a result of the Routeing Study and will inform the Environmental Impact Assessment (EIA).

The aim of the consultation was to give all interested parties the opportunity to comment on the Preferred Route for the overhead line. Information was provided through the Consultation Document, via 2 public exhibitions and on the Company website. Meetings were also held with local authorities, nature conservation groups, cultural heritage bodies and parish councils.

Following the initial round of consultations in February 2007, SPM reviewed the Preferred Route in light of comments received. After considering environmental and technical issues an alternative route was chosen for the southern section of the Preferred Route. A second round of consultations was undertaken on the Alternative Route and a second public exhibition held at St Martins.

A total of 165 responses have been received since the release of the Consultation Document in February 2007. Of these 165 responses, 70% were received from the Oswestry borough and 5% from the Wrexham area. The remaining responses were received from consultee groups based across the country and from individuals outside of the Oswestry and Wrexham areas.

To bring all of these comments together, SPM has compiled this Report on Consultation as a record of the consultation process related to the Consultation Document, the comments received and SPM's responses.

Part 2 of this document explains the consultation process undertaken from the outset of the project but focuses mainly on the release of the Consultation Document and the subsequent public consultation. The distribution of the document and advertisement of the public exhibitions are also described.

Part 3 of this document details the responses received during the consultation process. It outlines the comments from interested parties and the main issues raised by the general public. The main statutory bodies (Local Authorities, conservation and heritage groups) all replied with comments on the Preferred Route and the Alternative Route. Approximately the same number of responses were received from the general public during the two route consultations.

Part 4 of this document summarises the main issues raised during the public consultation and seeks to address the comments received. Further information is provided on; routeing across Ifton Meadows and Pont-y-Blew /Glyn Morlas, why the A483/A5 road was discounted early in the routeing study and why undergrounding has not been taken forward. General issues relating to visual amenity, nature conservation, perceived health effects and EMFs raised by members of the public during the public consultation are also covered.

2. Consultation Process

The consultation process undertaken is described in full in sections 1 and 3 of the Consultation Document. Consultation is undertaken at several stages during the routeing process. Initial consultation is undertaken on the basis of the broad principles of the project requirements and based on an identified study area prior to the determination of any route option corridors. This initial consultation informs the consultees of the broad project proposals and gives them an opportunity to make comments at an early stage in the project including their views on the boundaries of the study area. It also forms an important part in gathering baseline environmental information used to inform the routeing process and raises awareness of the project before finalising the chosen route for the statutory consents procedure.

Letters were initially sent to over 50 consultees including local authorities within the study area, statutory consultees, other environmental bodies and interested parties and utility companies with potential assets within the study area. Initial meetings to discuss the proposals were also offered to the local planning authorities and the key statutory consultees. A list of consultees is included in Appendix 1A of the Consultation Document. The Consultation Document was produced after these initial consultations.

SPM published the February 2007 Consultation Document for public inspection over a 6-week period that ran between 26th February and 13th April 2007.

As part of this consultation, two public exhibitions were held in Ruabon and St Martins. Meetings took place with the relevant Local Authorities and Statutory Bodies and letters were sent out to landowners, local parish and community councils and a number of other environmental bodies, interested parties and utility companies. During the consultation period, SP Energy Networks, on behalf of SPM, met with a number of parish councils and local authorities.

The Consultation Document was advertised for 2 weeks, via a public notice placed in local newspapers including the Wrexham Leader, North Shropshire Chronicle, Wrexham Mail and Oswestry Advertiser. This press notice outlined the consultation and directed the reader to locations where the document could be viewed.

SPM produced a leaflet outlining the project and containing contact details for the public to comment on the proposals. Members of the public were also able to fill in comments sheets during the public exhibitions.

The Consultation Document was deposited at 8 local libraries throughout the region and Wrexham and Oswestry planning offices and was also published on the SP Energy Networks website.

A number of letters have been received about the Preferred Route. These include responses from local people living near to the Preferred Route, people from the surrounding area, parish councils and consultees such as Natural England and CCW.

The first stage of public consultation resulted in a review of the Preferred Route and a further public consultation on an Alternative Route. A second public exhibition was held in St Martins with the information boards on display 3 weeks prior to representatives from SP Energy Networks being present for one afternoon and evening to discuss the project further. Letters were sent to all the interested parties contacted previously and all members of the public that had written in regarding the original Preferred Route, informing them of the public exhibition. The exhibition was publicised as before in the local press.

3. Record of Comments Received

3.1 Outline

This section is a summary of all of the responses received from the consultation outlined in Section 2 above.

All responses received since the start of the consultation period were logged and organised into broad groups based on the views expressed. Written responses were logged along with emails, phone calls and comments made during the exhibitions. All members of the public who sent in letters during the consultation were issued an acknowledgement letter confirming receipt of their comments and detailing the next stages of the project.

All correspondence received was forwarded on to TEP for review against the routing criteria outlined in the Consultation Document.

A total number of 165 written responses were received, 37 of which were from consultee groups and 129 from members of the public.

Comments were received from the following consultee groups.

Wrexham County Borough Council	CPAT
Oswestry Borough Council	RSPB
Countryside Council for Wales	RSPB Cymru
Natural England	National Trust Wales
Cadw	The Ramblers' Association
English Heritage	North Wales Wildlife Trust
Environment Agency	Shropshire Wildlife Trust
Environment Agency Wales	Wales & West Utilities
Defra	National Grid Transmission
Forestry Commission Wales	National Grid Distribution Network

3.2 Responses from Local Councils

Following meetings with Wrexham County, Shropshire County, Oswestry Borough and North Shropshire District planning and landscape officers, letters have been received from Wrexham and Oswestry Borough Councils.

Wrexham Council

Wrexham Council commented on the need for an update on the study area inventory. An alternative to the Preferred Route through the Park Eyton area was suggested and potential impacts on Johnstown Newts site (a designated Special Area of Conservation (SAC)) and on Listed buildings were highlighted.

Shropshire Council

No formal response was received from Shropshire Council. It was agreed during a meeting with council representatives that the Council would reply formally at the section 37 application and EIA stage.

Oswestry Council

Oswestry Council commented on the visual and ecological impact of the Preferred Route in the vicinity of Ifton Meadows Local Nature Reserve (LNR). On the Alternative Route, Listed buildings in Wigginton were identified and recommendations were made to contact Natural England and landowners.

North Shropshire District Council

No formal response was received from North Shropshire District Council.

3.3 Responses from Statutory Consultees

Countryside Council for Wales

Countryside Council for Wales (CCW) commented on the need for method statements and consent required for working in SAC sites. The organisation was satisfied with routeing in terms of landscape and requested to view ecological survey information along the route when complete.

Natural England

Natural England suggested SPM/TEP re-assess routeing criteria and weighting applied to Ifton Meadows LNR as the recreational aspect of site was not assessed. Also advised were breeding bird surveys at Ifton Meadows LNR and Higher Stewardship Scheme farms. Natural England also requested ecological survey information along the route and method statements for river crossings. On the Alternative Route Natural England welcomed the rerouting of the line to avoid Ifton Meadows LNR but noted that SPM must ensure that no damage occurs to Fernhill Pastures Site of Special Scientific Interest (SSSI) which the Alternative Route passes close to.

Cadw

Cadw provided information on Scheduled Monuments (SMs) in the study area and stated that it felt the Consultation Document adequately addressed the concerns of statutorily protected SMs and Listed buildings. No concerns were raised regarding the Alternative Route as no SMs or historic landscapes would be affected and the nearby registered park and garden of Brynkinalt would not be affected.

English Heritage

English Heritage felt it unnecessary for them to comment at this stage of the process. It was recommended that an appropriately qualified organisation is used to carry out the archaeological section of the EIA.

Environment Agency England & Wales

The Environment Agency requested a more detailed study of potential contaminated sites during the EIA and provided information on required vertical and horizontal clearances from waterways. Guidance on pollution prevention was also detailed. On the Alternative Route, guidance was given on river and canal crossings and details of Fernhill Pastures SSSI were provided.

3.4 Responses from Other Consultees

This consultation exercise has also provided an opportunity for other consultees to comment and the following responses have been received.

Table 3. Summary of comments received from consultees

Consultee	Date	Comment	Action	No Action
RSPB	18/04/07	Concerns over route crossing Ifton Meadows LNR and farm managed under the higher stewardship scheme (HSS).		Ifon Meadows LNR and HSS already mapped. Route alternative considered.
	29/08/07	Pleased that Ifton Meadows LNR is be avoided by Alternative Route. Description of a locally important area for breeding waders.	Pass information to TEP for walkover survey and studies in EIA.	
RSPB Cymru	08/10/07	Mitigation package that produces net gain is suggested. Details of guidance documents/policy given. Offer to read draft ecology chapter of ES.	Pass information to TEP for reference.	
Defra	15/03/07	No comment from Defra at this stage.		
Clwyd-Powys Archaeological Trust	14/03/07	Highlight impact of routes on previously unrecorded archaeology and request walkover survey of Preferred Route. Contact details for Cadw and suggestions for further detailed study in EIA.	Pass information to TEP for walkover survey and studies in EIA.	
	28/08/07	Alternative Route lies close to areas of archaeological significance but no known features will be affected by the intended work.		
Forestry Commission Wales	20/03/07	Letter passed to Area Land Agent.		
	27/03/07	Site poles to ensure mature and veteran trees are not removed.		Contact when line design complete to discuss tree removal.
	13/09/07	Site poles to ensure mature and veteran trees are not removed.	Keep informed of final decision.	
National Trust Wales	13/04/07	Reply for NT Wales and England. Happy with chosen routes as stay clear of NT land. Recommend contact with Welsh Historic Gardens Trust and Garden History Society.	Pass contact of Welsh Historic Gardens Trust and Garden History Society to TEP.	
	28/08/07	No comment to make on Alternative Route.		
The Ramblers' Association	31/03/07	Happy route wouldn't impact on any PROW. Would like to be contacted if any PROW are to be diverted.		Note to contact with EIA.
North Wales Wildlife Trust	02/04/07	Listed number of Wildlife Sites.	Pass to TEP to ensure sites are mapped.	
Shropshire Wildlife Trust	04/04/07	Concerns over routeing across Ifton Meadows LNR and Ebnal Lodge Wildlife Site.		Note to keep informed of developments.

	17/10/07	The Alternative Route appears to be acceptable as it avoids Ifton Meadows LNR and Ebnal Wildlife site. Note to contact Natural England regarding Fernhill Pastures SSSI, as route lies adjacent.		Location of SSSI and route already discussed with NE.
Wales & West Utilities	17/04/07	Low, medium and high pressure apparatus throughout study area.	Pass information to engineers for line design.	
National Grid Transmission	30/04/07	Deeside-Trawsfynydd 400kV Overhead Line identified in study area.		Already mapped in Consultation Document.
National Grid Distribution Network	03/04/07	Area not covered by NGDN, correct details given for Wales & West Utilities.	Send document to Wales & West Utilities.	
British Waterways	13/06/07	Alternative route would have a direct effect on users of the Shropshire Union canal which is a very attractive area.		Note to keep informed of project.

Following these responses, SP Manweb has continued a dialogue with Natural England and CCW in respect of agreeing approaches to baseline ecological surveys that will be required along the proposed route.

No response has been received from the following consultees:

Forestry Commission (England)	North Wales Fire Service
National Farmers Union	Highways Agency
National Farmers Union Wales	Dee Valley Water
Department of Trade & Industry	

3.5 Comments Received from Parish Councils

Written responses have been received from St Martins Parish Council and Chirk Town Council. St Martins Parish Council raised concerns over the route crossing Ifton Meadows LNR and questioned why the A483 hadn't been considered as an option. Chirk Town Council wrote to object to the overhead line on visual amenity grounds and recommended that the line be placed underground.

Informal feedback was also received during attendance of the Selattyn and Gobowen Parish Council meeting. Selattyn & Gobowen PC asked for the line route to avoid Wat's Dyke and for further consideration to be given to the A483/A5 road route. No responses have been received from the other Parish Councils consulted.

3.6 Responses from Members of the Public

Exhibition attendance Feb 2007

Ruabon exhibition: 27 people

St Martin's exhibition: 26 people

Exhibition attendance Sept 2007

St Martin's exhibition: 63 people

Of the 129 written responses received from members of the public, 108 were objections. Many responses recognised the need for reinforcement of the electricity network in the

Oswestry area and therefore, nearly all of the objections raised were related to the specific routeing of the overhead line.

The majority of the 52 objection letters received after the first two public exhibitions were concerned with the routeing across Ifton Meadows LNR. Comments received after the second public exhibition on the Alternative Route focussed mainly on the preference for the route to follow the A483/A5 road corridor. Fifty-six objection letters were received during the Alternative Route consultation.

A number of other issues were also commented on:

- The preference for the line to be placed underground.
- The visual aspects of an overhead line.
- The routeing through Pont-y-Blew/Glyn Morlas.
- Electric and magnetic fields and the perceived potential effects on health.
- Other nature conservation issues related to the line such as the impact on protected species and sensitive habitats.

Some minor route alterations were also suggested by the general public to take the route further away from properties. A number of responses also questioned why existing overhead lines in the area couldn't be rationalised to take the extra electricity cables.

4. Consultation Outcomes

4.1 Summary of Main Issues Arising From This Consultation

This section seeks to address the issues raised by members of the public and consultee groups during the consultation described above. Having carried out the consultation in respect of the Consultation Document, the main issues to consider are as follows:

- Re-evaluate routeing criteria with regard to recreational use of Ifton Meadows LNR.
- Consider route alternatives suggested by Wrexham BC.
- Explain why the A483/A5 road route option was rejected prior to the development of the Preferred Route and how this decision was reviewed following the earlier consultation process.
- Further describe why the road bridges can't be utilised to carry cables.
- Explain further the choice for routeing through Pont-y-Blew and Glyn Morlas.
- The support of the chosen Preferred Route (with the Alternative Route section) by Cadw, CPAT, CCW and in part by Natural England.

4.2 Routeing Across Ifton Meadows Local Nature Reserve

Concerns regarding the crossing of Ifton Meadows LNR were raised by Natural England, RSPB, Oswestry Council and Shropshire Wildlife Trust along with the majority of the public responses received after the first two public exhibitions. Main concerns were the potential effects upon ground nesting birds, such as skylark and meadow pipit, but also possible adverse effects upon recreational use of the site. The response to the public consultation

demonstrated that Ifton Meadows LNR is highly valued by the local community as a resource for informal recreation and enjoying wildlife.

The Electricity Safety, Quality and Continuity Regulations 2002 (ESQCR) place a number of requirements on an Electricity Distributor. Some of these are particularly relevant to overhead lines in the vicinity of recreational areas. SP Energy Networks has recently established a policy on overhead lines in the vicinity of such areas, which requires that new overhead lines at any voltage shall not be routed across recreational areas (Ifton Meadows LNR falls within this definition) unless appropriate risk mitigation measures are incorporated into the design.

These issues dictated that it would be appropriate to reappraise how Local Nature Reserves are considered in the routeing process. In the initial assessment, they were considered as local designations for nature conservation, but not as local recreational resources. It has always been acknowledged that these sites had public access and could be used for recreation, but to avoid 'double-counting' they were considered only in terms of nature conservation. In the assessment review carried out by TEP, the importance of Ifton Meadows LNR as a recreation area, as well as a site of nature conservation interest, is now taken into account.

TEP identified a link between the original Preferred Route at the Ceiriog valley, and eastern route options considered in the initial evaluation in the Consultation Document. This Alternative Route was considered to offer a diversion around both Ifton Meadows and the village of St Martin's. The link follows a northwest-southeast alignment to connect between the Ceiriog valley and Route C3 (as described in the Consultation Document) immediately east of St Martin's. In the initial evaluation of route options, Route C3 combined with C1(B) (also described in the Consultation Document) was assessed as being the best 'eastern' option between St Martin's and Oswestry substation, and was therefore used in this diversion. This route follows a generally north-south alignment, through sparsely settled areas near Wigginton, New Marton and Henlle. It crosses the Shropshire Union canal in the vicinity of New Marton Lock and joins with the Preferred Route south of Gobowen, near Great Fernhill.

TEP's assessment of the Preferred Route against an alternative to avoid Ifton Meadows LNR is finely balanced, with the original route performing better in terms of visual amenity (from private property), and ease of assimilation within the landscape, and the more eastern Alternative Route having a lesser effect on several designations and trees/woodlands. In balancing these differing impacts, the avoidance of direct effects on Ifton Meadows LNR and upon trees and woodlands, is considered sufficient to outweigh the effects upon landscape character and upon individual visual amenity likely to arise if the Alternative Route is selected.

4.3 Following A483(T)/A5 Road Corridor and Utilising Road Bridges

A number of actions have been highlighted by those consulted during the February-April 2007 round of consultations on the Preferred Route. In particular, in discussions with the Oswestry Borough Council Scrutiny meeting, SP Manweb have been asked to further explain the reasons for not choosing the strategic option of following the A483(T)/A5 road corridor for the Legacy to Oswestry route. No other consultee groups questioned the rejection of this as a route option but a large number of the general public stated a preference for the overhead line to follow the A483(T)/A5 road. The A483(T)/A5 road route was also suggested during the consultation as a suitable route for an underground cable. The reasons for not undergrounding are covered in section 4.4.

SP Manweb's approach to routeing is based on the principle that the major effect of an overhead distribution line is its visual intrusion and that the degree of visual intrusion can be

reduced by careful routeing, for example by utilising topography and trees to provide screening and backgrounding and by seeking to retain appropriate distances from settlements and viewpoints. In addition, routeing also takes account of other environmental considerations by seeking to avoid the most sensitive and valued natural and man made features.

The main technical and environmental considerations which should be studied in order to route a distribution line with least visual intrusion and least disturbance to people and the environment are determined from a study of likely effects and established routeing practice. These routeing considerations include topography, landscape character and areas of amenity value and scientific and historical interest.

The Consultation Document identified 4 strategic options for routeing and overhead line through the study area. These included: Option 1 to the east of the A483(T)/A5; Option 2 to the west of the A483(T)/A5; Option 3 following the main north south road corridor; and Option 4 paralleling the existing 132kV overhead line. These broad route options are shown on Figure 5.1 in the Consultation Document.

The area of Option 3 is described fully in the Consultation Document. For a variety of technical, economic, environmental and legislative reasons, the A483(T)/A5 was discounted at the strategic option stage. This option was subsequently revisited but following further review and discussion with North Wales Trunk Road Agency the original decision to discount the option was reconfirmed. This option was discounted due to the following constraints:

- The key issues affecting the routeing of an overhead line along the existing road in the northern half of the study area are the substantial areas of land supporting existing built development. The town of Ruabon and the Johnstown Newt Sites SAC restrict options for routes next to the road through this area. Developed areas immediately abut the road in places, and in the case of Ruabon development abuts the road corridor on both sides.
- In the central part of the study area the key constraints are the areas of historic parkland associated with the Wynnstay and Brynkinalt Estates. The A483(T)/A5 runs through the Wynnstay estate for over 2km and the Brynkinalt Estate for approximately 1.5km. Historic parklands have been identified as a key strategic constraint to routeing, to be avoided where possible. Within the parklands, areas of woodland abut the road corridor in places.
- The A483(T)/A5 crosses the River Dee through the Nant-y-Belan and Prynella Woods SSSI. An overhead line next to the road at this point would be required to pass through the two areas of ancient woodland, identified as key constraints to routeing. A large number of trees would have to be removed.
- The steep river valleys of the Dee and Ceiriog, in the vicinity of the two bridges, would make construction of an overhead line very difficult. A wood pole line would need to be routed down to the valley floor through these densely wooded areas resulting in significant clearance of ancient woodland and the crossing of the SSSI for the River Dee crossing as stated above. The Ceiriog Valley crossing would also require a large amount of woodland clearance, some of which is ancient woodland. The alternative would be the construction of large steel structures on either side of the valleys to support a long span of overhead line. These resulting structures would also require significant tree clearance and be visually obtrusive.
- It should be noted that it is not possible to erect wood poles along the viaducts.
- Original consultation with the local authority previously responsible for the viaducts (Conwy County Borough Council) confirmed that there was no provision for utility

services in the construction of the viaducts. Subsequent discussions have been held with North Wales Trunk Road Agency, the now responsible party for the viaducts, who have reconfirmed the previously stated position.

- There are six road junctions with the A483(T)/A5 between Wrexham and Oswestry, and numerous bridges over the main road. Should an overhead line be situated adjacent to the road corridor, it is likely that these would have to be crossed by local deviation.
- Built development either side of the roundabouts at Halton (including Chirk Airfield) and Gledrid form restrictions on routeing in these areas. There are no viable options for routeing an overhead past these areas without considerable deviations from the road corridor.
- It should be noted that should the route need to divert away from the A483/A5 corridor, to alleviate the above restrictions, this would result in resorting back to the Preferred Route in almost all instances.
- There are fewer constraints to the south adjacent the A5, however the settlements of Gobowen and Rhoswiel lie alongside the road severely restricting opportunities for routeing an overhead line in this area.

4.4 Undergrounding

No comments were received from statutory consultee groups regarding the placement of the line underground. St Martin's and Chirk Parish Councils both stated that undergrounding would be preferable to an overhead line.

The wording on undergrounding in the Consultation Document has been revised in light of comments received as to why SPM are looking at build overhead rather than underground:

- SPM is sensitive to public preference to place assets underground rather than overhead, however, there are both economic and technical reasons against this approach in this instance. SPM is obliged to comply with the requirements of the Electricity Act 1989 to develop and maintain an efficient, co-ordinated and economical system of electricity supply.
- For economic reasons, as previously stated, other UK Distribution Network Operators would also propose an overhead circuit in similar circumstances. It should be recognised the relative cost for an underground circuit would be between 5 to 10 times that of similarly rated overhead option. The variation would be dependent on a number of factors such as manufacturing costs, ground conditions for excavation and associated traffic management issues.
- As a result SPM policy is to attempt to find an overhead line route for all new high voltage distribution circuits, and only where there are exceptional constraints would undergrounding be considered.

4.5 Routeing through Pont-y-Blew and Glyn Morlas

A number of residents in the Pont-y-Blew/Glyn Morlas area raised concerns regarding the routeing of the Preferred Route through this area and also about the lack of consultation.

The routeing criteria have been revised and the route options re-evaluated following comments received about recreation from Natural England. This re-evaluation has

confirmed the route through this area is the preferred option. It is acknowledged that the route will have an impact on the visual amenity of residents in the vicinity of the line but careful siting of poles and will aim to reduce this impact.

It is considered that the approach to advertising, the public exhibitions and consultation was carried out in line with recommended guidelines. To have informed all residents in the vicinity of the Preferred Route would have required a large scale mail shot which is not normally carried out in this type of consultation. Those residents who have responded to the consultation have been and are now registered on the communication database for this project. They will be contacted with details of subsequent stages of the project, and have further opportunities to register their comments.

4.6 Broad Issues Arising from Consultation

A number of general issues relating to visual amenity, nature conservation, perceived health effects and EMFs have been raised by members of the public as reasons for objecting to the route. These issues are covered briefly below and will be assessed in detail during the next stage of the project, the Environmental Impact Assessment (EIA), and described further in the Environmental Statement (ES).

Visual Amenity

Section 3 of the Consultation Document outlines SPM's approach to routeing and details how the visual intrusion of an overhead distribution line can be reduced by careful routeing, for example by utilising topography and trees to provide screening and backgrounding. Responses received from the general public suggested because of the perceived impact on the visual amenity the overhead line should be placed underground or the existing network be rationalised to take the new line.

Further detail on undergrounding is given in section 4.4 of this document.

The existing overhead 132kV pylon line cannot be modified to take further cables as the steel towers already carry the maximum number of conductors (wires). Pylon lines are designed to carry one or two circuits, each made up of 3 conductors plus an additional earth wire. The pylon line that runs between Wrexham and Oswestry already carries two circuits. Section 2 of the Consultation Document explains why a new single circuit overhead line is required.

Nature Conservation

A number of responses from the general public raised concerns over the impact the new overhead line may have on nature conservation interests in the area. Section 4 of the Consultation Document details the nature conservation sites taken into consideration during the routeing study. The next stage of the project, the EIA, will involve TEP carrying out more detailed ecological surveys along the route of the overhead line. The ES will report on the anticipated environmental effects of the proposed overhead line and will identify any appropriate mitigation to avoid, reduce or compensate for adverse effects.

Electric and Magnetic Fields

Electric and magnetic fields can be produced naturally or through human activity and are always present when electricity is used. EMFs can be harmful at very high levels but the fields produced by overhead lines and substations are relatively low.

Electric fields are produced by voltage (the pressure of the flow of electricity) whereas magnetic fields are produced by current (the flow of electricity). Higher voltages produce higher electric fields and higher currents produced higher magnetic fields.

SPM ensures all electrical infrastructure stays within Government guidance for exposure to EMFs. The Health Protection Agency (HPA) advises the Government on exposure levels for EMFs. In 2004 the HPA recommended the adoption of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) 'reference levels' for public exposure to EMFs. The ICNIRP levels are:

- 5000 volts per metre for electric fields
- 100 microteslas for magnetic fields.

Typical field levels from 132kV overhead electricity lines are detailed in the table below.

		Electric Field (volts per metre)	Magnetic Field (microteslas)
132kV overhead lines (smaller steel pylons and largest wood poles)	Maximum	4,000	40
	Typical (under line)	1,000 – 2,000	0.5 – 2
	Typical (25m to side of line)	100 – 200	0.05 – 0.2
	Typical (100m to side of line)	2 – 20	0.01 – 0.04

Typical magnetic field levels from appliances in the home are detailed in the table below.

	Magnetic Field (microteslas)	
	Close to appliances	1 metre away
Electric Razor	2000	0.3
Vacuum Cleaner	800	2
TV, Washing Machine, Microwave	50	0.2
Bedside Clock	50	0.02
Fridge	2	0.01

The ES will address further the possible effects relating to EMFs.

5. Selection of the Proposed Route

SPM and TEP have considered all the comments and responses made during the consultation process on the Preferred Route and Alternative Route and have selected a Proposed Route. This Proposed Route is based on the Preferred Route in the borough of Wrexham with the Alternative Route section through the borough of Oswestry.

The Proposed Route represents the best option for the overhead line which meets the requirements of the Electricity Act 1989 to develop and maintain an efficient, co-ordinated and economic system of electricity supply to its customers. The route selection process has identified a technically feasible and economically viable overhead line route which causes the least disturbance to people and the environment.

The Proposed Route follows a broadly north-south alignment through Wrexham Borough and the borough of Oswestry, in Shropshire. It passes through a small section of the district of North Shropshire, in the vicinity of St Martin's village. It is approximately 20.6km overhead

line, with 3km underground cable. The Proposed Route avoids settlements, areas of high amenity, cultural or nature conservation value, whilst maximising the potential of the existing landform and vegetation for screening purposes.

This Proposed Route will be taken forward to the EIA stage and an Environmental Statement produced which will report on the anticipated environmental effects of the proposed connection, addressing the issues that the Secretary of State identifies in the Scoping Opinion as important and incorporating appropriately detailed assessments.

6. Conclusions

The route consultation approach was successful in engaging consultee groups and the local community. The 3 exhibitions attracted people across the local authority areas and over 165 comments were received. Twenty of the 37 consultee groups approached replied. All statutory bodies responded and have no major concerns regarding the chosen route. Of the 165 responses received, 108 were objections to the overhead line with the remainder being comments on specific aspects of the project.

The main issues raised by consultee groups and members of the public have been addressed in this document. The issues surrounding Ifton Meadows LNR resulted in the route options being re-evaluated and an Alternative Route being identified for further investigation and consultation. The Alternative Route raised no objections from consultee groups but 56 responses were received objecting to it from local members of the public.

The Proposed Route, which incorporates the Alternative Route through Oswestry borough, is considered to be a technically and economically feasible route which causes the least disturbance to people and the environment.

Further work will be carried out in the form of the EIA and ES to ensure all potential environmental effects of the proposed connection are identified. Appropriate mitigation to avoid, reduce or compensate for adverse effects will be described.

