2009 GB Seven Year Statement Update

May 2009

INTRODUCTION

We are pleased to present the May 2009 Update to our 2009 GB Seven Year Statement. The Updates are issued at regular intervals (normally quarterly), each reporting on the main developments since the previous issue and largely reflecting information changes notified to us by our customers. This is the first Update of our 2009 GB Seven Year Statement and reports on changes notified to us up to 31st May 2009.

1. 'GB SYS BACKGROUND' SUMMARY

The following table provides some headline figures relevant to this update. Section 3 gives more detail on capacity totals and plant margins.

Headline Figure	2009 GB SYS	May 2009 Update
Total Generation Capacity by 2015/16 (GW)	108.9	***113.3***
Total CCGT Capacity by 2015/16 (GW)	38.7	***42.0***
Unavailable Generating Units by 2015/16 (GW)	2.9	***2.9***
Plant Margin – 2009/10 (%)	40.1	***40.1***
Plant Margin – 2015/16 (%)	71.3	***78.3***

Notes:
1. Generation capacity values are based on station TEC values where possible.
2. Details of unavailable generating units are given in Table 3.11 of the GB SYS.

2. GENERATION

In the tables in the following sections, data in bold italics indicates differences between this update and the previously published contracted position. The Consents column refers to Section 36 and (where appropriate) Section 14 consents for generation projects.

2.1 Transmission Access

Access to the GB Transmission System is provided through arrangements with NGET, acting as GBSO, under the Connection and Use of System Code (CUSC). The CUSC has applied across the whole of Great Britain since BETTA "go-live" (1 April 2005). Prior to BETTA "go-live", the CUSC applied in England and Wales but different arrangements applied in Scotland. The pre BETTA go-live generation offers and agreements between relevant TOs and Users were converted into GB Offers and Bilateral Agreements under Standard Condition C18 of the Electricity Transmission Licence. The requirements of C18 have now been met and all the relevant Bilateral Agreements are now in place.

2.2 Transmission Networks Quarterly Connections Update

The Transmission Networks Quarterly Connections Update is a new document produced by NGET which provides information on the status of generation agreements. The document is intended to complement the Seven Year Statement updates, and can be viewed on the following web page.

http://www.nationalgrid.com/uk/Electricity/GettingConnected/gb_agreements/

2.3 Planned Transmission Contracted Generation up to 2015/16

This section gives details of future generation projects relevant to this update. The Changes reported are changes relative to the previously reported contracted position, and include:

1. The completion date of An Suidhe wind farm has been deferred to 31/05/10.
2. The name of Black Craig 90MW wind farm has been changed to Dunoon wind farm, and the TEC has been reduced to 20MW.
3. Careston Wind Farm has been withdrawn.
4. Fairburn Wind Farm is under construction.
5. Aultmore, Clashindarroch, Edinbane and Kyle wind farms are all owned by Vattenfall Wind Power Ltd.
6. Drax Power Ltd have signed a contract to connect a new biomass fired power station at Drax 132kV substation, with a CEC and TEC of 290MW and a completion date of 31/10/12.
7. Drax Power Ltd have signed a contract to connect a new biomass fired power station at Killingholme 400kV substation, with a CEC and TEC of 290MW and a completion date of 31/10/14.
8. Drax Power Ltd have signed a contract to connect a new biomass fired power station at a new 275kV GIS substation at South Shields, with a CEC and TEC of 290MW and a completion date of 31/10/14.
9. Thor Cogeneration Limited have delayed the connection date of the Brine Field CCGT to 30/04/13.
10. Wainstones Energy Ltd have signed a contract to connect a new five-module CCGT of TEC 1520MW at Carrington 400kV substation by 31/10/15.
11. ESBI Contracting have signed a contract to connect two new 480MW single-shaft CCGT generating units at Drakelow 400kV substation by 31/10/15.
12. The Pembroke CCGT will now be completed in three stages, rather than two stages as previously: Stage 1 will have CEC of 840MW and a TEC of 800MW with a completion date of 01/08/11, Stage 2 will have CEC of 840MW and a TEC of 800MW with a completion date of 01/12/11, and Stage 3 will have CEC of 420MW and a TEC of 400MW with a completion date of 01/04/12.
13. Wyre Power Limited have signed a contract to connect 950MW of new generation (2x425MW CCGT & 2x50MW OCGT) at Stanah by 31/10/14.
14. Section 36 consent has been granted for Hatfield and Pembroke.
15. The sizes of the individual stages of Gwynt Y Mor offshore wind farm have been revised: Stage 1 is now 147MW and Stage 3 is now 294MW. Stage 2 remains at 294MW.
16. The connection date of the Humber Gateway offshore wind farm has been delayed to 01/04/13, with a reduced TEC of 220MW.
17. London Array offshore wind farm has consents approved. The first stage of TEC has been deferred to 01/04/12.
18. DONG Walney UK Ltd have signed a contract to connect 178MW of offshore wind generation at Haysham by 02/04/10, and a further 183MW of offshore wind generation at a new 400kV substation at Stanah by 02/04/11.

Further details are given in the table below.

Station Name	Capacity (MW)		Completion Date		Consents Status	Under Construction Status	Company	Plant Type	Licensee	Agreement Type
	Previous	New	Previous	New						
An Suidhe	30	30	2008	***2010***	Yes	Yes	An Suidhe Wind Farm Ltd	Onshore Wind	SHETL	BCA
Aultmore	60	60	2014	2014	No	No	***Vattenfall Wind Power Ltd***	Onshore Wind	SHETL	BCA
Dunoon Wind Farm	90	***20***	2014	2014	No	No	Infinenergy Ltd	Onshore Wind	SHETL	BCA
Careston Wind Farm, Brechin, Angus	31.5	**-**	2015	**-**	No	No	Renewable Energy Systems Ltd	Onshore Wind	SHETL	BCA
Clashindarroch Wind, Huntly	112.7	112.7	2014	2014	No	No	***Vattenfall Wind Power Ltd***	Onshore Wind	SHETL	BCA
Edinbane	42	42	2009	2009	Yes	Yes	***Vattenfall Wind Power Ltd***	Onshore Wind	SHETL	BCA
Fairburn Wind Farm	40	40	2009	2009	Yes	***Yes***	SSE Generation Ltd	Onshore Wind	SHETL	BCA
Kyle	300	300	2011	2011	No	No	***Vattenfall Wind Power Ltd***	Onshore Wind	SPT	BCA
Drax Biomass Power Station	-	***290***	-	***2012***	No	No	Drax Power Ltd	Biomass	NGET	BCA
Immingham Renewable Power Station	-	***290***	-	***2014***	No	No	Drax Power Ltd	Biomass	NGET	BCA
Port of Tyne	-	***290***	-	***2014***	No	No	Drax Power Ltd	Biomass	NGET	BCA
Brine Field	1020	1020	2012	***2013***	No	No	Thor Cogeneration Ltd	CCGT	NGET	BCA

Station Name	Capacity (MW)		Completion Date		Consents Status	Under Construction Status	Company	Plant Type	Licensee	Agreement Type
	Previous	New	Previous	New						
Carrington	-	***1520***	-	***2015***	No	No	Wainstones Energy Ltd	CCGT	NGET	BCA
Centrum Power	-	***960***	-	***2015***	No	No	ESBI Contracting Ltd	CCGT	NGET	BCA
Pembroke Stage 1	0	***800***	2010	***2011***	***Yes***	No	RWE Npower plc	CCGT	NGET	BCA
Pembroke Stage 2	800	800	2010	***2011***	***Yes***	No	RWE Npower plc	CCGT	NGET	BCA
Pembroke Stage 3	1600	***400***	-	***2012***	***Yes***	No	RWE Npower plc	CCGT	NGET	BCA
Wyre Power	-	***850***	-	***2014***	No	No	Wyre Power Ltd	CCGT	NGET	BCA
Wyre Power	-	***100***	-	***2014***	No	No	Wyre Power Ltd	OCGT	NGET	BCA
Hatfield	800	800	2011	2011	***Yes***	No	Powerfuel plc	IGCC with CCS	NGET	BCA
Gwynt Y Mor Stage 1	294	***147***	2011	2011	No	No	Gwynt Y Mor Offshore Wind Farm Ltd	Offshore WInd	NGET	BCA
Gwynt Y Mor Stage 2	294	294	2012	2012	No	No	Gwynt Y Mor Offshore Wind Farm Ltd	Offshore WInd	NGET	BCA
Gwynt Y Mor Stage 3	147	***294***	2013	2013	No	No	Gwynt Y Mor Offshore Wind Farm Ltd	Offshore WInd	NGET	BCA
London Array Stage 1	630	630	2011	***2012***	***Yes***	No	London Array Ltd	Offshore WInd	NGET	BCA

Station Name	Capacity (MW)		Completion Date		Consents Status	Under Construction Status	Company	Plant Type	Licensee	Agreement Type
	Previous	New	Previous	New						
London Array Stage 2	370	370	2014	2014	***Yes***	No	London Array Ltd	Offshore WInd	NGET	BCA
Humber Gateway	220	220	2011	***2013***	No	No	EON Climate & Renewables UK Humber Wind Ltd	Offshore WInd	NGET	BCA
Humber Gateway (Stage 2)	80	**-**	2011	**-**	No	No	EON Climate & Renewables UK Humber Wind Ltd	Offshore WInd	NGET	BCA
Walney 1	-	***178***	-	***2010***	Yes	No	DONG Walney UK Ltd	Offshore WInd	NGET	BCA
Walney 2	-	***183***	-	***2011***	Yes	No	DONG Walney UK Ltd	Offshore WInd	NGET	BCA
TOTAL (MW)	**6961.2**	**11040.7**								

2.4 Existing Transmission Contracted Generation

The following table lists existing stations that are relevant to this update. Changes to the contracted position include:

1. The TEC at Hunterston has decreased by 15MW, and the TEC at Torness has increased by 15MW, effective from 1st April 2009.

Station Name	Capacity (MW)		Company	Plant Type	Licensee	Agreement Type
	Previous	New				
Hunterston	1089	***1074***	British Energy Generation (UK) Ltd	Nuclear AGR	SPT	BCA
Torness	1200	***1215***	British Energy Generation (UK) Ltd	Nuclear AGR	SPT	BCA
TOTAL	**2289**	**2289**	**MW**			

2.5 Transmission Contracted Generation beyond 2015/16

The following table lists generation projects with commissioning dates beyond 2014/15. Changes to the contracted position include:

1. Cairn Duhie wind farm (formerly 34.5MW) has been withdrawn
2. Dumnaglass wind farm have deferred their completion date to 31/10/18.
3. Keadby Generation have signed a new contract to connect a new 850MW CCGT power station at Keadby by 31/10/16.
4. Section 36 consent has been granted for the Kings Lynn B CCGT (981MW in 2016).
5. Seabank Power have signed a contract to connect two new 412MW CCGT units at Seabank 400kV substation by 30/11/23.
6. National Grid International have signed a new contract to connect a new interconnector to Belgium of TEC 1000MW by 31/10/19 at a new 400kV GIS substation at Richborough.
7. RWE Npower have signed a new contract to connect a new two-stage nuclear power station at a new 400kV GIS substation at Sellafield. Stage 1 of TEC 1800MW connects by 31/10/21, and Stage 2 of TEC 1800MW connects by 31/10/22.
8. The Nuclear Decommissioning Authority have signed a contract to connect a new nuclear power station at Oldbury-on-Severn 400kV GIS substation, with a CEC of 1650MW and a TEC of 1600MW, and a completion date of 31/10/23.

The following table gives further details.

Station Name	**Capacity (MW)**	**Company**	**Plant Type**	**Licensee**	**Completion Date**
Cairn Duhie Wind Farm, Ferness, Nairn	**-**	Renewable Energy Systems Ltd	Onshore Wind	SHETL	-
Dumnaglass Wind Farm, Stratherick, Inverness	108	RES UK & Ireland Ltd	Onshore Wind	SHETL	***2018***
Keadby 2	850	Keadby Generation Ltd	CCGT	NGET	2016
Seabank 2	824	Seabank Power Ltd	CCGT	NGET	2023
Belgium Interconnector	1000	National Grid International Ltd	Interconnector	NGET	2021
Cumbria Coast (North) Stage 1	1200	RWE Npower plc	Nuclear APR	NGET	2021
Cumbria Coast (North) Stage 2	2400	RWE Npower plc	Nuclear APR	NGET	2022
Oldbury C	1600	Nuclear Decommissioning Authority	Nuclear EPR	NGET	2023
TOTAL	**7982**	**MW**			

3. CAPACITY TOTALS, PEAK DEMANDS AND PLANT MARGINS

3.1 Generation Capacities

This table gives information on capacity totals for all directly-connected and Large Power Stations, and include the capacity and background changes reported in Section 2. The winter peak demands are customer-based forecasts in MW and are used to calculate plant margins in section 3.2. Capacity values are based on station TEC values where possible.

Generation Background	Total Capacity (MW)							
	08/09	09/10	10/11	11/12	12/13	13/14	14/15	15/16
GB SYS background (SYS)	-	83482	89082	94434	97973	103069	109897	113286
Consents (C)	-	83482	88712	92338	93885	95424	95833	95833
Existing or Under Construction (E,UC)	-	83432	87374	86353	86353	86402	86409	86409
Winter Peak Demand	58400	59594	60236	61426	62123	62574	63077	63533

Notes:

1. The winter peak outturn demand for 2008/09 is included for completeness.
2. The figures are based on the assumed year of commissioning or decommissioning.
3. The SYS background includes all planned generation with or without Section 36 and/or Section 14 consent.
4. The Consents background includes all planned generation with Section 36 and/or Section 14 consent.
5. The Existing or Under Construction background includes all generation projects currently under construction and all planned closures of generation.
6. The capacity totals above do not include the importing TEC values for the Moyle Interconnector (80MW) or the East-West Interconnectors (875MW from 2011/12 onwards), as the interconnectors are assumed to be exporting to Northern Ireland and the Republic of Ireland at the time of winter peak.
7. The winter peak demands (customer-based forecast) are used in section 3.2 to calculate plant margins for each of the above backgrounds; these demands exclude station demand, but include the assumed values of exports to Northern Ireland (250MW) and the Republic of Ireland (437.5MW from 2011/12 onwards).
8. Plant contracted for 2009/10 and under construction includes the following: Severn Power Stage 1, Staythorpe Stages 1, 2 & 3, West Burton Stage 1, Netherlands Interconnector Stage 1, Thanet, Greater Gabbard, Crystal Rig 2, Dun Law Extension, Longpark, Toddleburn, Whitelee Stage 3, Edinbane, Gordonbush, Kilbraur Stage 2, Millenium Stage 3 and Tullo.
9. Projects assumed to be under construction in 2009/10 (for connection beyond 2009/10) include Netherlands Interconnector Stages 2 & 3, Grain Stages 2 & 3, Severn Power Stage 2, West Burton B Stages 2 & 3, Clyde, Beinn an Tuirc 2, Glendoe Stage 2 and Fasnakyle Hydro Extension.

3.2 Plant Margins

The following projected margins are based on the capacity totals for the three generation backgrounds and the customer-based demand forecasts given in section 3.1 above.

Generation Background	Plant Margin (%)						
	09/10	10/11	11/12	12/13	13/14	14/15	15/16
GB SYS background (SYS)	40.1	47.9	53.7	57.7	64.7	74.2	78.3
Consents (C)	40.1	47.3	50.3	51.1	52.5	51.9	50.8
Existing and Under Construction (E, UC)	40.0	45.1	40.6	39.0	38.1	37.0	36.0

4. TRANSMISSION SYSTEM

This section reports on significant changes to the planned transmission system, or revisions to construction programmes. Table 6.2 of the main statement gives further details of contracted transmission schemes.

Drax (by 2012)

Construct a new 132kV AIS double-busbar substation at Drax, replacing the existing 132kV substation. Include a new skeleton generator bay in the new substation. Replace circuit breaker X705, on the Drax-Keadby-Brinsworth circuit within Drax 400kV substation, with a new 63kA breaker. Reconductor the L12 section of the Drax-Eggborough 1 circuit with 2x850mm^2 conductor tensioned for operation at 90ºC.

West Weybridge (by 2013)

Remove the two synchronous compensators.

Killingholme (by 2014)

Construct a new skeletal generator bay at Killingholme 400kV substation. Construct two new reactor bays at Killingholme 400kV substation and install a 1% 2750MVA, reactor tie. Reconductor the 4ZQ 400kV overhead line route from Keadby to the tee-point with Creyke Beck, Killingholme and Humber Refinery with 3x700mm^2.

Transmission Works (by 2014)

Hotwire the Grendon-Sundon 400kV 2x500mm^2 circuits for 83^{0}C operation.

Reconductor the Stocksbridge-Macclesfield 400kV circuit between Stalybridge and Macclesfield with 2x570mm^2 conductor tensioned for operation at 75ºC.

South Shields (by 2014)

Construct a new GIS 275kV substation to include a bus coupler, two additional overhead line feeder bays, and one skeleton generator bay. Turn in the Tynemouth-West Boldon 275kV circuit to form Tynemouth-South Shields and South Shields-West Boldon 275kV circuits.

Stanah (by 2014)

Construct a new 400kV substation at Stanah.

Increase the capacity of the existing Penwortham cables on the Heysham-Stanah-Penwortham circuits.

Install two 400kV Quadrature Boosters at Penwortham.

Install one 275kV Quadrature Booster at Lister Drive.

Reconductor the Cellarhead-Macclesfield 400kV circuit with 2x620mm^2 GZTACSR conductor.

Reconductor the Cellarhead-Daines 400kV circuit with 2x620mm^2 GZTACSR conductor.

Reconductor the section of the Macclesfield-Stocksbridge circuit of L2 construction with 2x570mm^2 conductor for operation at 75ºC.

Hotwire the Elland-Stalybridge circuit to achieve a thermal rating of 1070MVA.

Hotwire the Stalybridge-Bredbury circuit to achieve a thermal rating of 1140MVA.

Carrington (by 2015)

Construct a new 400kV GIS double-busbar substation at Carrington, including four skeleton GIS bays. Construct three overhead line feeders from the new substation to connect to the existing system by means of tee connections to the Carrington-Daines 1, Carrington-Daines 2 and Penwortham-Daines circuits. Extend the Partington 400kV substation by one bay, and divert the existing Carrington 400/132kV transformer SGT 7 into the new bay. Reconductor the section of the Penwortham-Daines circuit between the new tee point and Daines with GZTACSR conductor. Hotwire the Cellarhead-Daines circuits for operation at 90ºC.

Drakelow (by 2015)

Extend Drakelow 400kV substation to the West (Main 1 and Reserve 1/3) to provide two new section switches and one new bus coupler, with space provision for two new generator bays. Decommission Drakelow 275kV substation. Reconnect the Bustleholm circuits onto the newly extended Drakelow 400kV substation. Replace all (six) 400kV 50kA rated circuit breakers at Drakelow 400kV substation.

Bustlehom (by 2015)

Install two new 400/275kV interbus transformers at Bustleholm substation to feed the existing Bustleholm 275kV substation. Carry out line entry modifications at Bustleholm substation.

Transmission Works (by 2015)

Reconductor the Hams Hall-Drakelow 400kV single circuit with GAP or CTC.

Replace cable sections in the Kitwell-Oldbury 275kV single circuit.

Overhead Line Works (by 2015)

Hotwire the Deeside-Treuddyn tee leg of the Deeside-Legacy-Trawsfynydd 2 circuit for operation at 90ºC.

Keadby (by 2016)

Extend the Main and Reserve busbars at Keadby 400kV substation, and construct two feeder bays and one reactor bay. Construct and connect a 1% on 100MVA base 2750MVA rating reactor across the two-way split at Keadby using the new reactor bays and existing spare bays. Upgrade the existing switchgear and associated infrastructures at Keadby 400kV substation.

Reconductor the L12 section of the Drax to Eggborough circuit with 2x850mm^2 conductor operating at 90°C.

Reconductor the High Marnham to Ratcliffe circuit with GZT ACSR conductor operating at 170°C.

Richborough/Canterbury North (by 2019)

Construct a new 400kV GIS breaker-and-half substation at Richborough, with two breakers, two feeders to Canterbury and a skeletal generation bay. Construct a new 400kV double-circuit overhead line from Richbourough to Canterbury North, strung with 2 x 500mm^2 AAAC conductor. Install a new 400kV GIS double-busbar substation at Canterbury North, with six feeder bays, one bus-coupler bay and one bus-section. Turn the Sellindge, Kemsley and Richborough circuits into the new 400kV GIS substation.

Transmission Works (by 2019)

Reconductor the Dungeness-Sellindge double-circuit overhead line with 620mm^2 GZTACSR GAP conductor.

Install two new QBs on the Beddington-Rowdown circuits at Rowdown substation, with the ability to be future modified to enable switching of the units into the new Lydd-Rowdown circuits.

Construct a thrust-bored cable tunnel from Hurst to Crayford with equivalent rating to the Hurst-Eltham cable tunnel (1217/1190/1100MVA Winter/Spring & Autumn/Summer rating) Replace the 2.12km cable from Crayford to Hurst on the VN route with 2x400kV XLPE cable elements rated at 1770MVA.

Install two new 400/275kV 1100MVA Interbus SGTs at Hurst on the Littlebrook-Hurst circuits along with revised cable interfaces on mesh corners 4 and 2, in line with circuit transpositions proposed under the south London medium term strategy work.

Reconductor the additional 65km of 400kV Kemsley-Longfield Tee-Rowdown overhead line sections with a combination of 2x620mm^2 GZTACSR GAP conductor on L2 and L8 constructed sections and 3x700mm^2 AAAC on L6 constructed sections.

Reconductor the L6 sections (approx 20km) of the Kingsnorth- Northfleet East (Cobham junction to Kingsnorth 4YN) overhead line route with 3x700mm^2 AAAC conductor at 65^{0}C.

Reconductor the Barking-Northfleet East 400kV double-circuit route with 2x620mm^2 GZTACSR GAP conductor at 170^{0}C, including the replacement of the 0.3km Thames crossing overhead line element via a permanent diversion including bespoke tower and conductor design to achieve the above capability.

Reconductor the 400kV Littlebrook-Longfield tee, and Longfield tee-Rowdown overhead line sections with 2x620mm^2 GZTACSR GAP conductor at 170^{0}C.

Install two new 400kV 3100MVA Quadrature boosters on the Kingsnorth/Damhead Creek-Tilbury 400kV circuits.

Install an additional two bus section and bus coupler bay and two new 400/275kV SGT bays within the new Tilbury 400kV substation, extended appropriate to this work.

Install a seven-bay 400kV double-busbar AIS substation at Warley.

Install a 14-bay 400kV GIS double-busbar substation at Waltham Cross.

Install two feeder bays and one skeleton section at Elstree 400kV.

Install two feeder bays and one interbus transformer bay at Tilbury 400kV.

Upgrade one of the two 275kV Tilbury to Elstree circuits (ZB route) to 400kV and reconductor with 2x620mm^2 GZTACSR GAP conductor throughout.

Replace two out of the three 275/132kV transformers at Warley with 400/132kV transformers.

Sellafield (by 2021)

Construct a new three-section 16-bay double busbar 400kV substation at the power station site. An assessment of whether it is going to be AIS or GIS will be made in the detailed development stage post offer acceptance, consistent with National Grid policy. Install four 400kV feeder bays, two Bus Coupler, three 400/132kV SGT, three Skeletal Generator bays and four Bus Section switch bays.

Construct a double-circuit overhead line from Sellafield via Roosecote to a new Heysham substation. The works include underground cable for 18km through part of the Lake District

National Park and 11km of cable across Morecambe Bay. Alternative options for the connection, including overhead line or cable through further sections of the National Park, will be considered in the post-acceptance development period.

Construct new 400/132kV demand connection substations at Sellafield, Roosecote and Barrow Tee complete with new 400/132kV SGTs.

Construct a new 400kV GIS substation at Heysham and connect to the existing Heysham substation via two Series Reactors.

Construct a new 3x700mm^2 AAAC double-circuit overhead line from the new Heysham substation to Sellafield 400kV via Roosecote and Barrow Tee substations.

Transmission Works (by 2021)

Increase the capacity of the existing Penwortham cables on the Heysham-Stanah-Penwortham circuits.

Reconductor the overhead line circuits from Penwortham to Kirkby with 2x620mm^2 GAP conductor and uprate to 400kV operation.

Uprate the route from Kirkby via Rainhill to Frodsham to 400kV operation. This circuit already has 4x400mm^2 conductor hence only modified insulation is required for the voltage uprate.

Install two 400/132kV SGTs at Washway Farm, three 400/275kV interbus transformers at Kirkby, four 400/132kV SGTs at Rainhill and four 400/275kV interbus transformers at Fiddlers Ferry.

Reconductor the Partington-Daines circuit with 2x620mm^2 GZTACSR conductor.

Construct a new 400kV double-circuit overhead line with 3x700mm^2 AAAC at 90^{0}C from Quernmore to Padiham substation and extend/build the existing substations as required.

Transmission Works (by 2022)

Construct new 400/132kV demand connection substations at Stainburn and Distington complete with new 400/132kV SGTs.

Construct a new 3x700mm^2 AAAC double-circuit overhead line from the Sellafield 400kV substation to Harker 400kV via Stainburn, Distington and Barrow Tee substations.

Reconductor Penwortham-Padiham overhead line with 2x620mm^2 GZTACSR (at least 3100MVA winter post fault rating) on L2 sections and with 3x700mm^2 AAAC.

Reconductor the Penwortham-Kearsley overhead line with 2x620mm^2 GZTACSR.

Reconductor the Padiham-Kearsley overhead line with 2x620mm^2 GZTACSR and with 3x700mm^2 AAAC on L6 sections.

Reconductor the Kearsley-Partington overhead line with2x620mm^2 GZTACSR

Reconductor the Kearsley-Carrington overhead line with 2x620mm^2.

Reconductor the Carrington-Daines overhead line with 2x620mm^2 and with 3x700mm^2 AAAC on L6 sections.

Uprate the Bradford West-Monk Fryston circuit to 400kV and reconductor with 2x700mm^2 AAAC at 90^{0}C. Expand the existing 400kV substation at Bradford West into a single switch arrangement with an additional new 400/275 kV transformer, connected to 275kV mesh corner 4.

Seabank (by 2023)

Add four new bays at Seabank 400kV GIS double-busbar substation: a reserve bus section bay, one bus coupler bay and two skeletal generator bays.

Reconductor the Hinkley Point-Taunton double-circuit overhead line with GAP-type conductor.

Hot-wire the Taunton-Exeter double-circuit overhead line to 90^0C operation (currently 2x500mm^2 AAAC conductor at 75^0C)

Carry out uprating of the 275kV Hinkley Point-Bridgwater route to 400kV operation, and reconductoring from the tee point to Hinkley Point with GAP conductor.

Construct a new double-circuit overhead line between the Hinkley Point leg of the broken Hinkley Point-Melksham overhead line route and Seabank 400kV substation. Re-conductor the existing overhead line section of the Hinkley Point-Seabank double-circuit overhead line with GAP conductor (L2 towers) and install 2x850mm^2 AAAC at 90^0C on the new build section of the route (L12 towers).

Reconfigure the 400kV substation line entry reconfiguration at Melksham by swapping one of the Hinkley Point-Melksham circuits and one of the Bramley-Melksham circuits line entries at Melksham 400kV substation.

Hot-wire both of the overhead line circuits on the Tockington-Melksham 400kV overhead line route to 65^0C operation (with an allowance in the upper range for re-conductoring should the overhead line fail a hot-wiring test).

Reconductor the Seabank leg of the Seabank-Melksham 400kV overhead line circuit with 2x850mm^2 AAAC conductor at 75^0C operation.

Bank both of the existing 400kV cables in the Cowley-Minety circuit and install new cables in the 400kV Cowley-Walham circuit.

Reconductor both of the Bramley-Melksham overhead line circuits with GAP conductor.

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