

# Golden Hill Primary

 DNOA Decision  
**Signposting**

## Constraint description

Golden Hill 33/11 kV primary is located within the same substation as Golden Hill 132/33 kV BSP. It comprises two 33/11 kV transformers, which are expected to overload following an outage on the other.

## Reinforcement description

The reinforcement proposal is to install 20/40 MVA units, and a new 11 kV switchboard.



Constraint Season  
Winter and Summer



Outage Type  
N-1

## Justification for decision

No flexibility requirement under Holistic Transition until 2030.

## Constraint management timeline

2026 H1 **Signposting**

2024 H2 Signposting

**Time to Reinforce:** 2 years

**Constraint Type:** Demand

## Estimated flexibility volumes per year under Holistic Transition:

2026	2027	2028	2029	2030
0.0 MWh	0.0 MWh	0.0 MWh	0.0 MWh	35 MWh



For more information, see the **Pembroke Group NDP report:**  
[dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan](https://dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan)

# Golden Hill to St Florence



DNOA Decision

**Reinforce with Flexibility**

## Constraint description

The Golden Hill to St Florence 33 kV circuit overloads when supporting all 3 primaries (Tenby, St Florence and Broadfield) under N-1 conditions.

## Reinforcement description

Reinforce the 33kV circuit between Golden Hill and St Florence.



Constraint Season  
Winter and Summer



Outage Type  
N-1

## Justification for decision

Reinforcement works are being progressed. Flexibility will be utilised as required to manage the constraint in the interim.

## Constraint management timeline

2026 H1 Procurement

**Time to Reinforce:** 2.5 years

**Constraint Type:** Demand

## Estimated flexibility price and volumes per year under Holistic Transition:

	2026	2027	2028	2029	2030
Availability	£83 / MWh 112 MWh	£25 / MWh 910 MWh	£9 / MWh 2,668 MWh	£5 / MWh 4,957 MWh	£2 / MWh 11,501 MWh
Utilisation	£5,000 / MWh 1 MWh	£1,498 / MWh 9 MWh	£511 / MWh 27 MWh	£275 / MWh 50 MWh	£118 / MWh 115 MWh



For more information, see the **Pembroke Group NDP report:**  
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# Lime Street and Garngoch group



DNOA Decision

**Reinforce with Flexibility**

## Constraint description

A 33 kV fault to Main Busbar 2 at Garngoch can result in both Garngoch and Lime Street being supplied entirely by a single 33 kV circuit from Swansea North.

## Reinforcement description

The reinforcement solution is to install a second 33/11 kV transformer at Lime Street and install a 6.5 km 33 kV circuit to Swansea North BSP.



Constraint Season  
Winter and Summer



Outage Type  
N-1

## Justification for decision

Reinforcement works are being progressed. Flexibility will be utilised as required to manage the constraint in the interim.

## Constraint management timeline

**2026 H1 Procurement**

**2024 H2 Procurement**

**Time to Reinforce:** 2.5 years

**Constraint Type:** Demand

## Estimated flexibility price and volumes per year under Holistic Transition:

	2026	2027	2028	2029	2030
Availability	£10 / MWh	£5 / MWh	£3 / MWh	£2 / MWh	£1 / MWh
	8,390 MWh	16,415 MWh	29,078 MWh	43,920 MWh	63,958 MWh
Utilisation	£601 / MWh	£290 / MWh	£164 / MWh	£108 / MWh	£74 / MWh
	84 MWh	164 MWh	291 MWh	439 MWh	640 MWh



For more information, see the **Swansea North BSP NDP report:**

[dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan](https://dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan)

# Merlins Bridge Primary



## Constraint description

Merlin's Bridge primary is a two 33/11 kV transformer primary supplied from Haverfordwest BSP via two 33 kV circuits. Both transformers are rated at 7.5/15 MVA and overload for the loss of the other.

## Reinforcement description

The reinforcement proposal is a new primary substation to de-load existing primary.



Constraint Season  
Winter and Summer



Outage Type  
N-1

## Justification for decision

Flexibility procurement is required to ensure the needs of the network are met.

## Constraint management timeline

2026 H1 Procurement

2024 H2 Signposting

**Time to Reinforce:** 2 years

**Constraint Type:** Demand

## Estimated flexibility price and volumes per year under Holistic Transition:

	2026	2027	2028	2029	2030
Availability	£0.00 / MWh	£0.00 / MWh	£83 / MWh	£38 / MWh	£8 / MWh
	0.0 MWh	0.0 MWh	29 MWh	649 MWh	3,129 MWh
Utilisation	£0.00 / MWh	£0.00 / MWh	£5,000 / MWh	£2,265 / MWh	£470 / MWh
	0.0 MWh	0.0 MWh	0.3 MWh	6 MWh	31 MWh



For more information, see the **Pembroke Group NDP report:**  
[dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan](https://dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan)

# Neyland Primary



DNOA Decision

**Signposting**

## Constraint description

Neyland has two 33/11 kV transformers rated at 5/6.25 MVA. For an arranged fault or outage on one of the transformers, the other picks up the full demand of the site.

## Reinforcement description

The reinforcement proposal is to upgrade both transformers.



Constraint Season  
Winter and Summer



Outage Type  
N-1



## Justification for decision

No flexibility requirement under Holistic Transition until 2030.

## Constraint management timeline

2026 H1 **Signposting**

2024 H2 Signposting

**Time to Reinforce:** 2 years

**Constraint Type:** Demand

## Estimated flexibility volumes per year under Holistic Transition:

2026	2027	2028	2029	2030
0.0 MWh	0.0 MWh	0.0 MWh	0.0 MWh	4 MWh



For more information, see the **Pembroke Group NDP report:**  
[dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan](https://dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan)

# Penblewin Primary



DNOA Decision

**Reinforce with Flexibility**

## Constraint description

For a first circuit outage (arranged or fault) which results in the loss of either Penblewin 33/11 kV primary Transformer (T1 or T2) the remaining transformer in service begins to overload in-line with the load growth projections. Future years will also lead to the 33 kV circuit supplying the primary to overload under intact network conditions.

## Reinforcement description

Replacing the two transformers with 12/24 MVA units would resolve this constraint if carried out alongside 33 kV circuit works to free up capacity.



Constraint Season  
Winter and Summer



Outage Type  
N-1

## Justification for decision

Reinforcement works are being progressed. Flexibility will be utilised as required to manage the constraint in the interim.

## Constraint management timeline

**2026 H1 Procurement**

**2024 H2 Signposting**

**Time to Reinforce:** 2.5 years

**Constraint Type:** Demand

## Estimated flexibility price and volumes per year under Holistic Transition:

	2026	2027	2028	2029	2030
Availability	£83 / MWh	£83 / MWh	£70 / MWh	£44 / MWh	£19 / MWh
	32 MWh	643 MWh	1,584 MWh	2,493 MWh	5,799 MWh
Utilisation	£5,000 / MWh	£5,000 / MWh	£4,187 / MWh	£2,660 / MWh	£1,143 / MWh
	0.3 MWh	6 MWh	16 MWh	25 MWh	58 MWh



For more information, see the **Pembroke Group NDP report:**

[dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan](https://dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan)

# Pontllanfraith and Cwmfelinfach

 DNOA Decision  
**Signposting**

## Constraint description

The 33kV circuits from Crumlin BSP to Cwmfelinfach and Pontllanfraith each overload for the loss of the opposite circuit.

## Reinforcement description

Eventually a new 33/11kV substation will be built in the area fed from Crumlin BSP and a demand transfer away from this site will be made to resolve the issue. Flexibility may be required to ensure the overload is managed until the work is complete.



Constraint Season  
Winter and Summer



Outage Type  
N-1

## Justification for decision

No flexibility requirement under Holistic Transition until 2030.

## Constraint management timeline

2026 H1 Signposting

**Time to Reinforce:** 5 years

**Constraint Type:** Demand

## Estimated flexibility volumes per year under Holistic Transition:

2026	2027	2028	2029	2030
0.0 MWh	0.0 MWh	0.0 MWh	0.0 MWh	0.2 MWh



For more information, see the **Crumlin BSP NDP report:**  
[dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan](https://dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan)

# St Florence to Tenby Tee



DNOA Decision

**Signposting**

## Constraint description

The St Florence – Tenby Tee 33 kV circuit overloads when supporting both Tenby and Broadfield primaries under N-1 conditions.

## Reinforcement description

Reinforce the 33kV circuit between St Florence and Tenby Tee.



Constraint Season  
Winter and Summer



Outage Type  
N-1



## Justification for decision

Reinforcement works are being progressed. Flexibility will be utilised as required to manage the constraint in the interim.

## Constraint management timeline

2026 H1 Signposting

**Time to Reinforce:** 2.5 years

**Constraint Type:** Demand

## Estimated flexibility volumes per year under Holistic Transition:

2026	2027	2028	2029	2030
0.0 MWh	0.0 MWh	0.0 MWh	0.7 MWh	14 MWh



For more information, see the **Pembroke Group NDP report:**  
[dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan](https://dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan)

# St Twynells Primary

 DNOA Decision  
**Signposting**

## Constraint description

An outage of either of the 33/11 kV transformers at St Twynells primary substation is forecasted to cause an overload of the other transformer at St Twynells primary substation.

## Reinforcement description

Replace the transformers at St Twynells primary substation with 7.5/15 MVA units.



Constraint Season  
Winter and Summer



Outage Type  
N-1

## Justification for decision

No flexibility requirement under Holistic Transition until 2029.

## Constraint management timeline

2026 H1 **Signposting**

2024 H2 Signposting

**Time to Reinforce:** 2 years

**Constraint Type:** Demand

## Estimated flexibility volumes per year under Holistic Transition:

2026	2027	2028	2029	2030
0.0 MWh	0.0 MWh	0.0 MWh	0.9 MWh	34 MWh



For more information, see the **Pembroke Group NDP report:**  
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# Steynton circuits

 DNOA Decision  
**Flexibility**

## Constraint description

There are N-1 outages when either of the two circuits overload when required to support the demand of both primaries (Steynton and Milford Haven).

## Reinforcement description

The proposed reinforcement is to build a new primary substation in the area or re-configure Milford Haven primary. This reinforcement could also be used to resolve the constraint on the primary transformers at Steynton primary.



Constraint Season  
Winter and Summer



Outage Type  
N-1

## Justification for decision

Flexibility procurement is required to ensure the needs of the network are met.

## Constraint management timeline

**2026 H1 Procurement**

**2024 H2 Signposting**

**Time to Reinforce:** 2.5 years

**Constraint Type:** Demand

## Estimated flexibility price and volumes per year under Holistic Transition:

	2026	2027	2028	2029	2030
Availability	£0.00 / MWh	£0.00 / MWh	£83 / MWh	£26 / MWh	£3 / MWh
	0.0 MWh	0.0 MWh	377 MWh	5,008 MWh	38,594 MWh
Utilisation	£0.00 / MWh	£0.00 / MWh	£5,000 / MWh	£1,585 / MWh	£206 / MWh
	0.0 MWh	0.0 MWh	4 MWh	50 MWh	386 MWh



For more information, see the **Pembroke Group NDP report:**  
[dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan](https://dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan)

## Aberaeron

### Scheme description

Aberaeron is a single transformer site. For an N-1 outage of the transformer, the site is limited by the 11 kV backfeeds. Reinforcement involves voltage compensation and/or circuit reinforcement.

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### Justification for decision

Flexibility is not suitable to manage this constraint due to the severity of the voltage constraint.

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### Constraint Information

**Outage Type** N-1  
**Constraint Type** Voltage



DNOA Decision  
**Reinforce**

## Ashgrove

### Scheme description

Ashgrove primary substation is supplied by a pair of mismatched 33/11 kV transformers. The loss of the higher rated transformer means the lower rated unit must supply the full demand. Reinforcement involves upgrading the lower rated transformer and 33 kV switchgear.

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### Justification for decision

Flexibility is not suitable here due to the severity of the constraint.

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### Constraint Information

**Outage Type** N-1  
**Constraint Type** Thermal



DNOA Decision  
**Reinforce**

## Llanfyrnach

### Scheme description

Llanfyrnach is a single transformer site. For an N-1 outage of the transformer, the site is limited by the 11 kV backfeeds. The proposed reinforcement solution is to install a second 33/11 kV transformer and a new 33 kV circuit to Llanfyrnach.

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### Justification for decision

Flexibility is not suitable here due to the complexity of the interconnected 11 kV network associated with the single transformer primary.

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### Constraint Information

**Outage Type** N-1  
**Constraint Type** Thermal



DNOA Decision  
**Reinforce**



## Llandrindod Wells Primary

### Scheme description

An N-1 scenario for the loss of one transformer at Llandrindod Wells primary causes and overload of the remaining transformer. The proposed reinforcement solution is the replacement of both 66/11 kV transformers to higher rated units (12/24 MVA).

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### Justification for decision

The transformers are now due for asset replacement, and the constraint has been pushed back to beyond completion of these works.

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### Constraint Information

**Outage Type** N-1  
**Constraint Type** Thermal



## Swansea North GSP to Rhos BSP

### Scheme description

An N-2 constraint for the loss of the dual circuit 132 kV H route between Carmarthen and Rhos, leaves customers at risk of rota disconnection until a circuit is restored. The reinforcement solution is a new 132 kV circuit between Swansea North GSP and Rhos BSP.

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### Justification for decision

Flexibility is not suitable to manage this constraint due to its complexity.

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### Constraint Information

**Outage Type** N-2  
**Constraint Type** Thermal



## Llanfoist

### Scheme description

N-1 constraint for the loss of one of the Super Grid Transformers (SGTs) at Rassau Grid Supply Point (GSP) will result in the remaining SGT overloading in the future. Reinforcement involves installing a new SGT at/in the vicinity of Rassau GSP.

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### Justification for decision

Flexibility is not suitable to manage this constraint as it is on the transmission network.

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### Constraint Information

**Outage Type** N-1  
**Constraint Type** Thermal



## Golden Hill to Broadfield

### Scheme description

An N-1 outage for the loss of the Golden Hill – St Florence circuit results in the Pembroke South – Broadfield circuit and connected primaries dropping below the statutory voltage limit. The reinforcement solution is building a new 33 kV circuit between Golden Hill and Broadfield.

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### Justification for decision

Flexibility is not suitable to deal with this constraint due to the amount of flexibility required and the severity of the voltage issue.

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### Constraint Information

**Outage Type** N-1  
**Constraint Type** Thermal and Voltage



DNOA Decision  
**Reinforce**

## Rhos to Newcastle Emlyn

### Scheme description

An N-1 condition for the loss of one of the 33 kV circuits to Newcastle Emlyn primary heavily loads the remaining circuit. Proposed reinforcement is to uprate the limiting section of circuit.

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### Justification for decision

Flexibility is not suitable to manage this constraint due to its complexity.

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### Constraint Information

**Outage Type** N-1  
**Constraint Type** Thermal



DNOA Decision  
**Reinforce**

## Pembroke GSP to Milford Haven BSP

### Scheme description

Under N-2 scenarios the entire group could be fed via just one 132 kV circuit. The proposed reinforcement solution is to install a fourth 132 kV circuit between Pembroke GSP and Milford Haven BSP. Additional works include extending the existing 132 kV mesh layout at Milford Haven.

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### Justification for decision

Flexibility is not suitable to manage this constraint due to its complexity.

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### Constraint Information

**Outage Type** N-2  
**Constraint Type** Thermal



DNOA Decision  
**Reinforce**



# St Davids Primary

## Scheme description

St Davids primary is a single transformer site with constraints on the 11 kV interconnection. The proposed reinforcement solution is to install a second 33/11 kV transformer and a new 33 kV circuit from St Davids to Brawdy primary substation.

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## Justification for decision

Flexibility is not suitable here due to the complexity of the interconnected 11kV network associated with the single transformer primary.

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## Constraint Information

**Outage Type** N-1  
**Constraint Type** Thermal



DNOA Decision

**Reinforce**



For more information visit: [dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan](https://dso.nationalgrid.co.uk/planning-our-future-network/network-development-plan)