SP ENERGY NETWORKS

South West Scotland Developer Forum

10th June 2016

Grand Central Hotel, Glasgow

Agenda

- Introduction – Pearse Murray
- System Design – Diyar Kadar
- SPD Update – Elaine Forsyth
- Land and Planning – Bob McGuire
- Programme Update – David Raftery, Bob McGuire, John Rodger
- Questions – Pearse Murray
- Feedback – Cheryl Blenkinsop

SP ENERGY NETWORKS

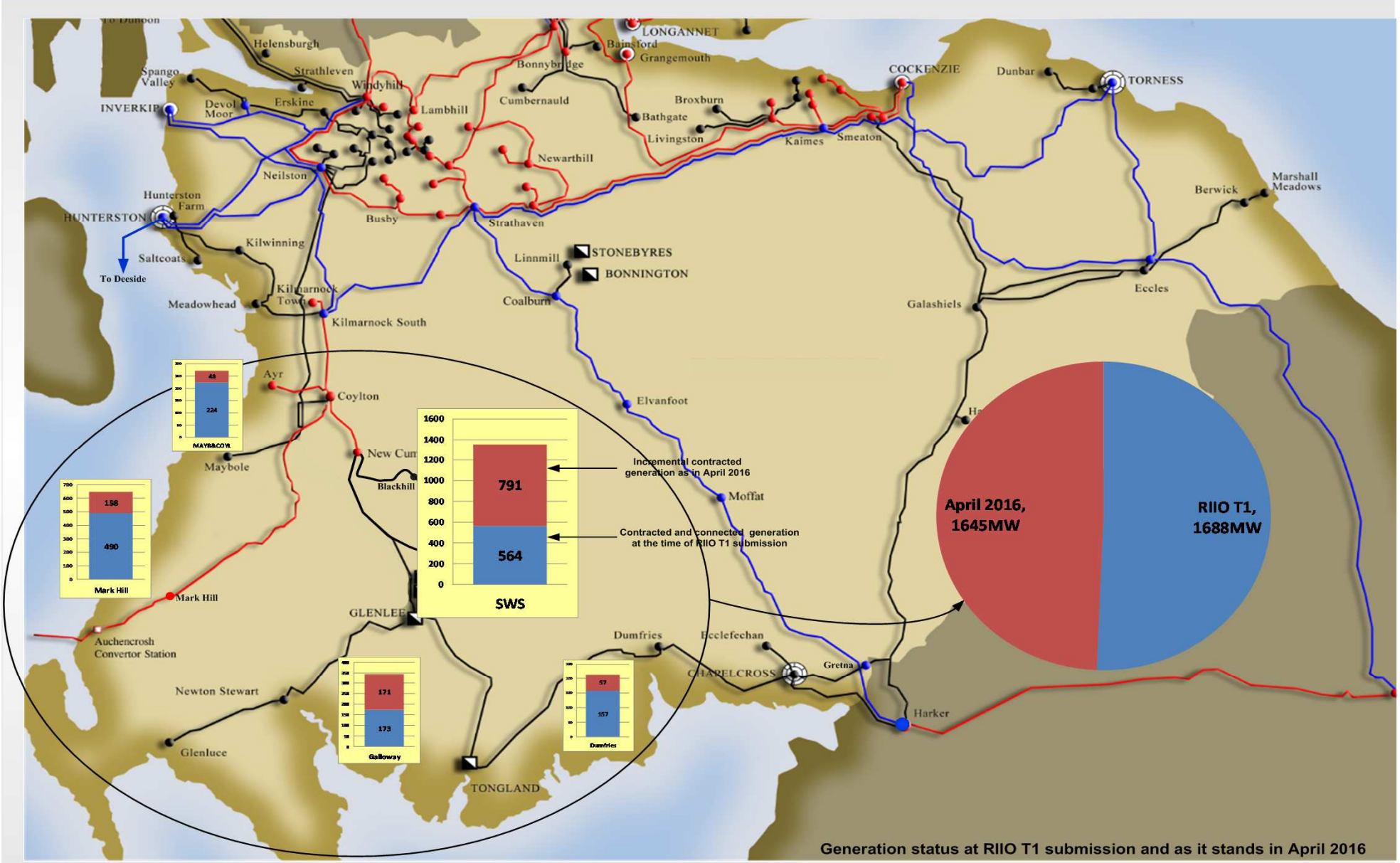
10th June 2016

SWS Developer Forum

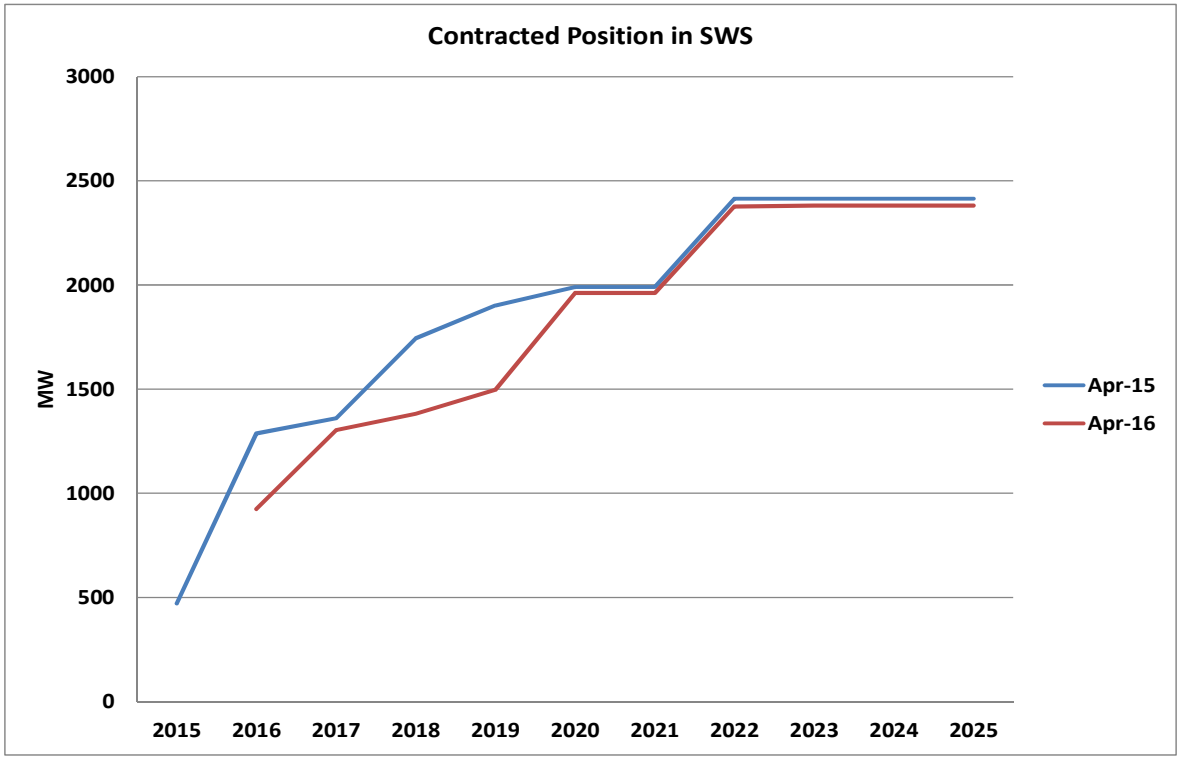
SPT System Design

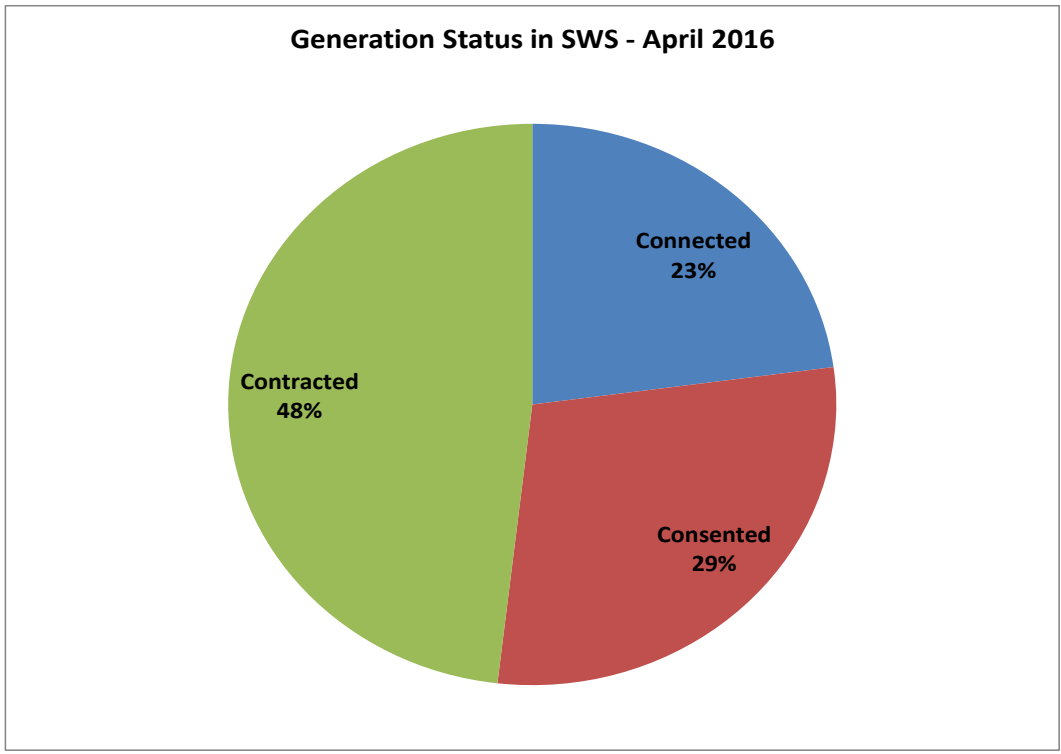
Diyar Kadar

Generation Background



Current Status





Initial delay (up to 2017) is due to consenting issues in SWS, later delays is due to change of connection dates by developers

Only 23% of the total generation is currently connected

48% of the generation is contracted but not consented

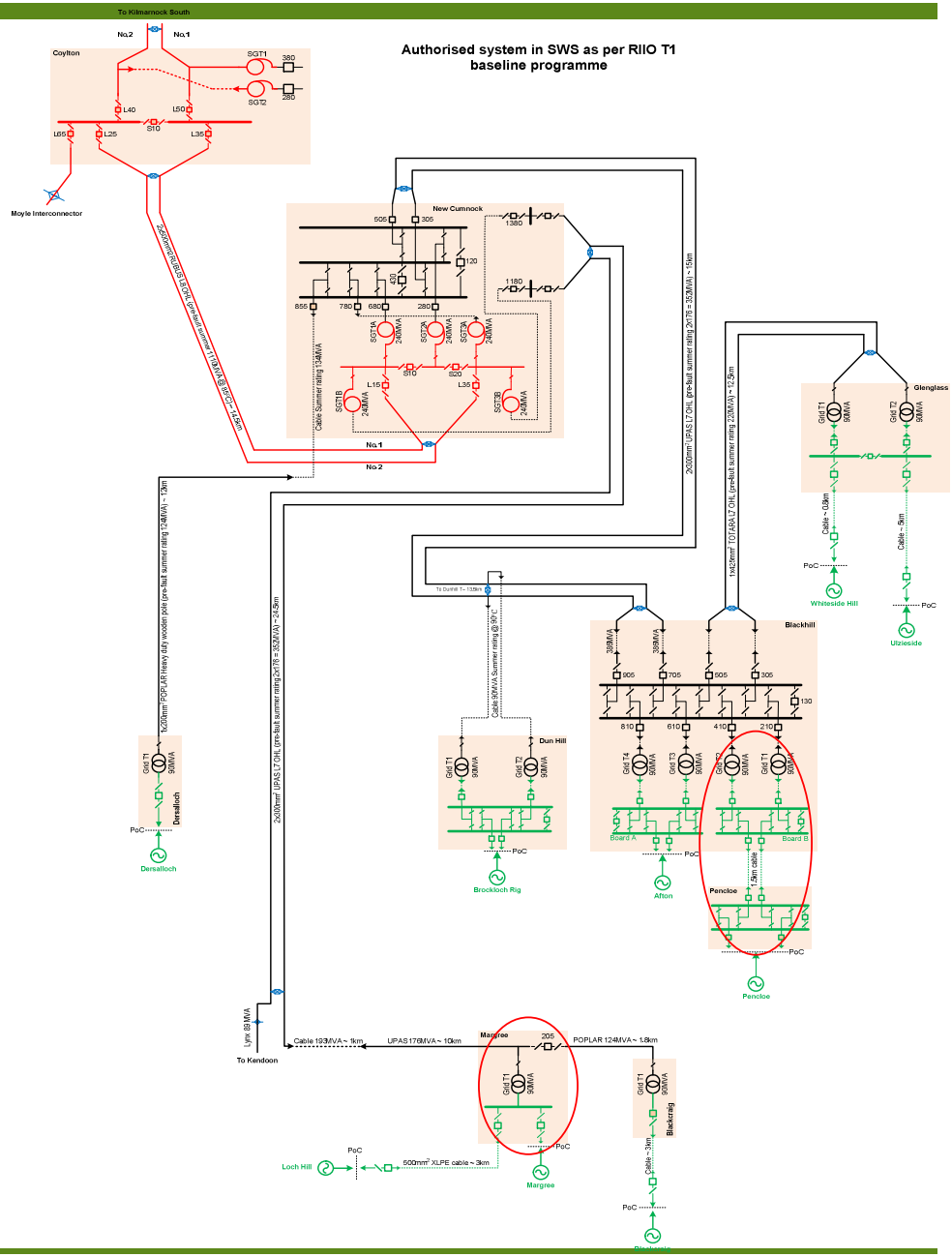
Baseline system in SWS

At New Cumnock 132kV Board A has a firm capacity of 480MVA and non-firm of 720MVA

At New Cumnock 132kV Board B will be running as two radial circuits, each with a 240MVA non-firm capacity

6 of the original 9 baseline wind farms are consented.

Works at these substations are continuously being reviewed



Future Developments

Utilisation of non build solutions to provide access to non-firm capacity on the system.

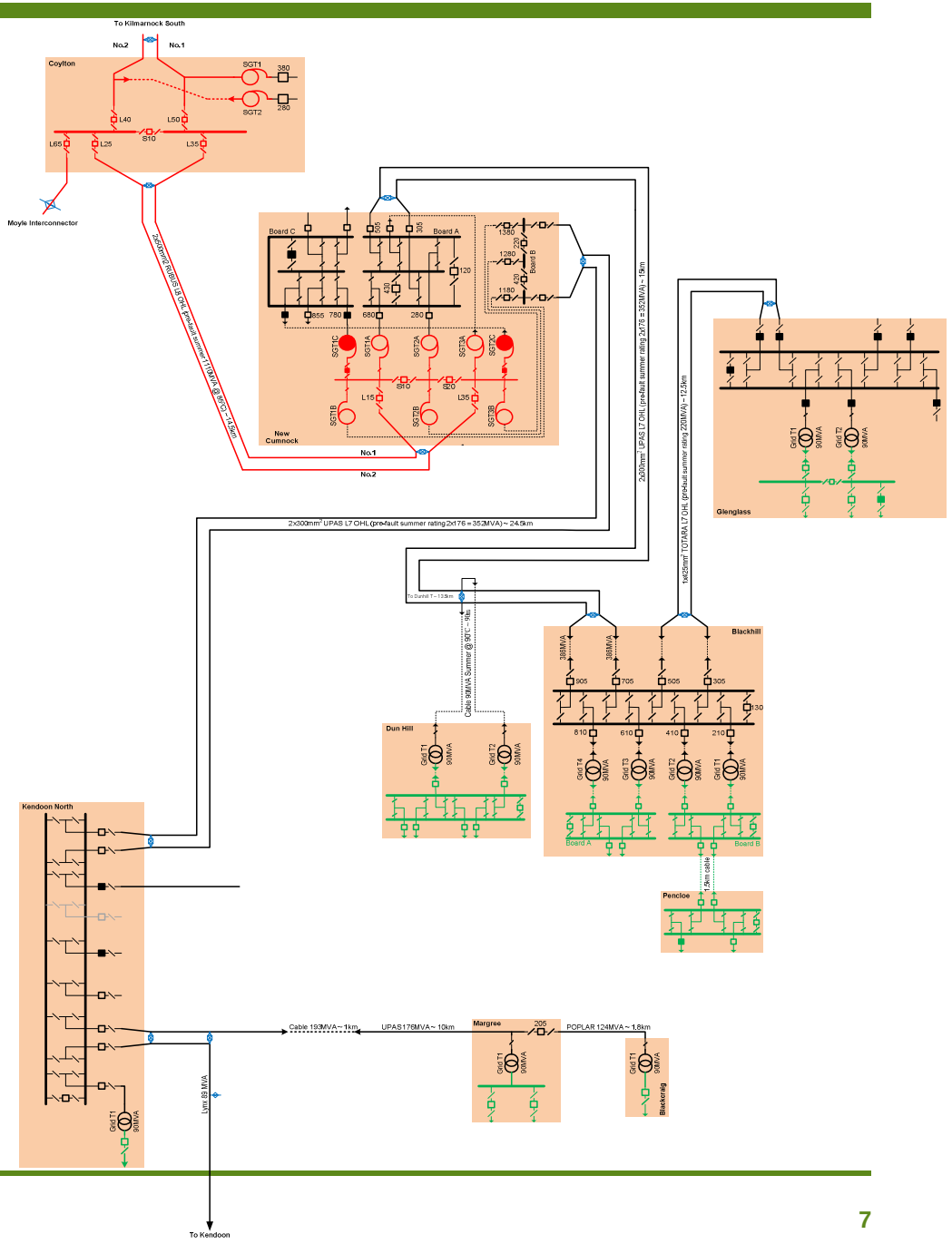
Implementation of load management schemes to enable non-firm access to the system.

Provision of restricted availability access for consented wind farms to achieve early connections.

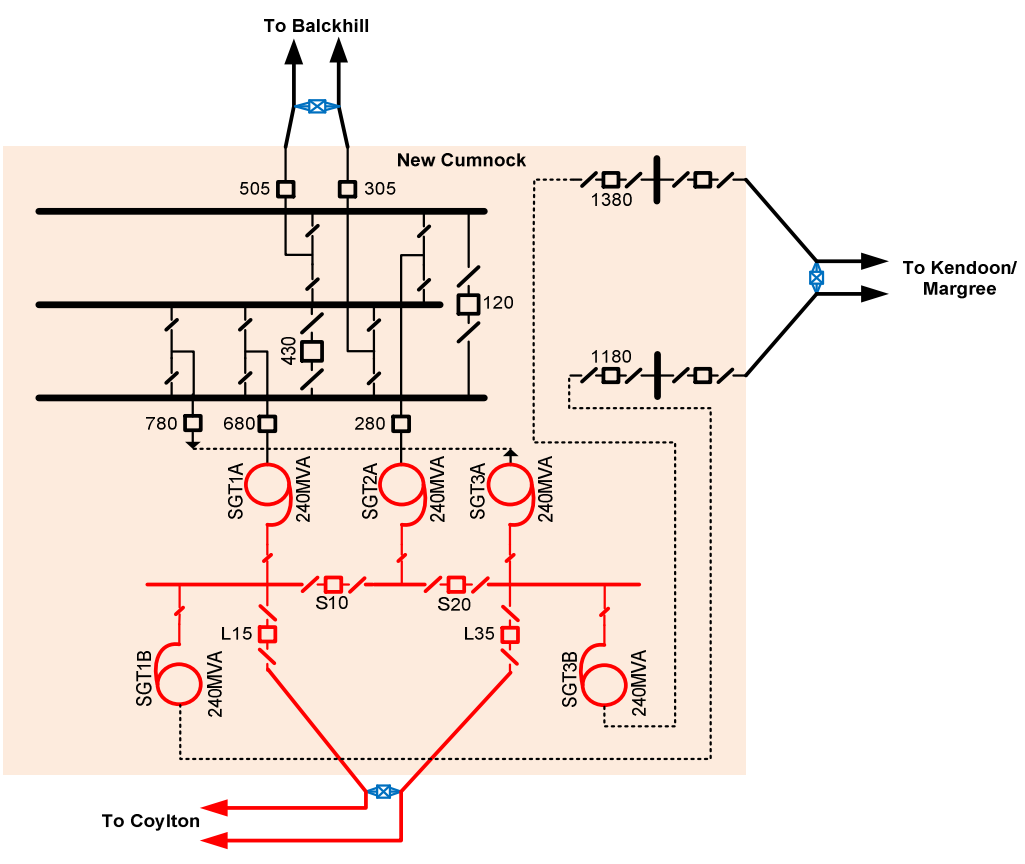
Once all non-firm capacity has been contracted, further infrastructure developments are planned.

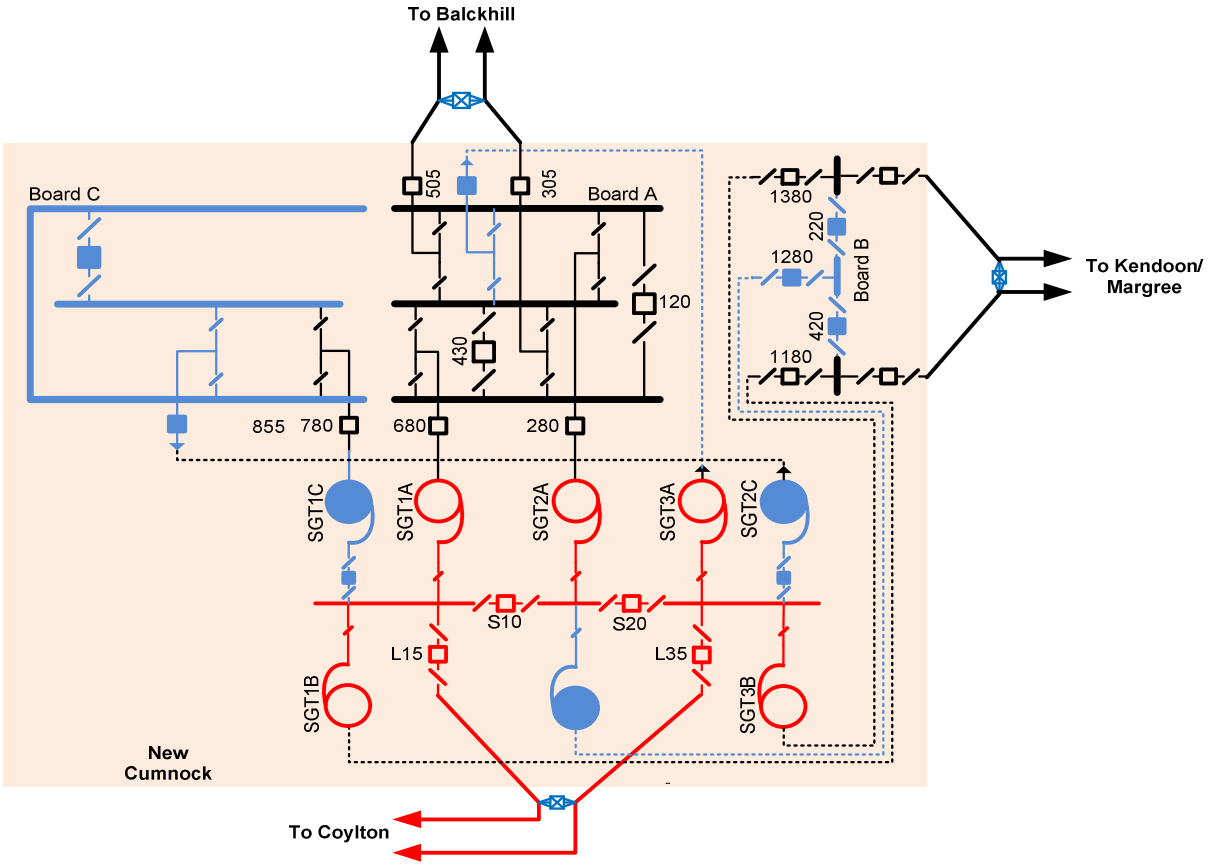
The reinforcements mainly entail the enhancement of transmission system capacity at major nodes.

Changes in the contracted background are continuously monitored to develop the system in a coordinated, efficient and economic manner.



Future System Plans - New Cumnock

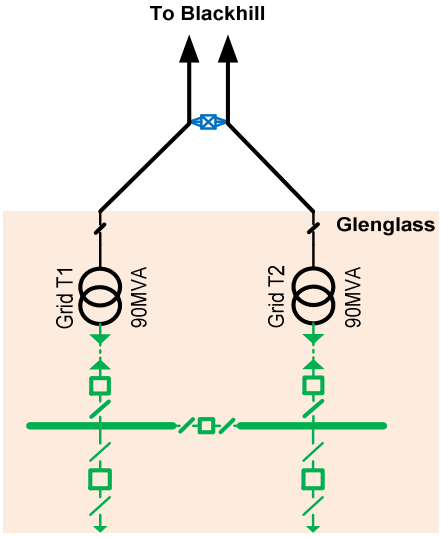


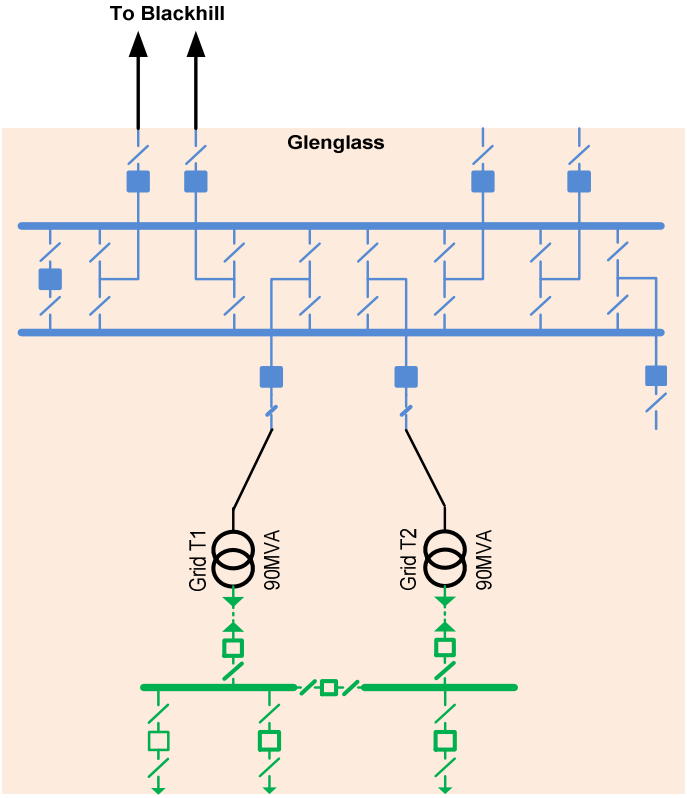


New Cumnock – create new Board (C). Install three new transformers. Run Board B solid.

This will provide three 132kV Boards. Boards A and B with firm capacity of 480MVA, Board C with firm capacity of 240MVA

Future System Plans - Glenglass

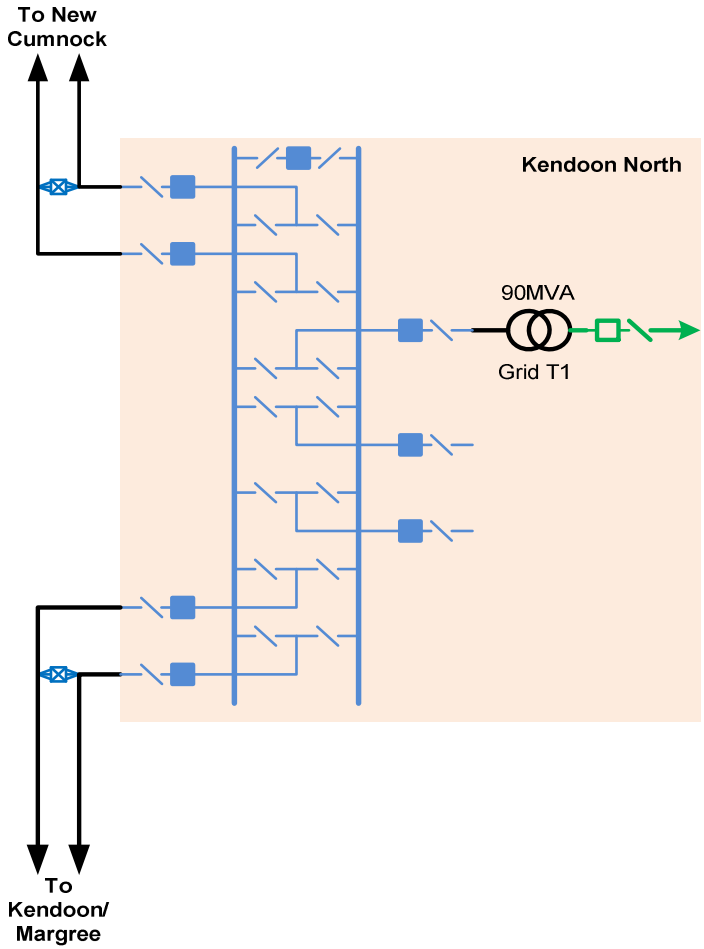




Extend the 132kV collector at Glenglass to create a double busbar 132kV collector to connect three large contracted wind farms.

This will maximise the utilisation of the OHL between Glenglass and New Cumnock

Future System Plans – Kendoon North



Establishment of a substation North of Kendoon (Kendoon North) to enables the connection of further wind farms.

However significant changes to the contracted position requires the re-design of Kendoon North to ensure an economic and efficient development of the system.

In Summary

Baseline system developments in SWS are progressing as originally designed and as per our RIIO T1 submission. However against the contracted background more capacity is required

The system in SWS, from a design perspective, is being developed to ensure it can be scaled up or scaled down due to significant uncertainties in the generation background

With current contracted background and proposed developments, the non-firm capacity of the system has almost been reached.

Further connections require plans for additional reinforcements to develop collector substations and exit routes to the wider system.

SP ENERGY NETWORKS

SP Distribution

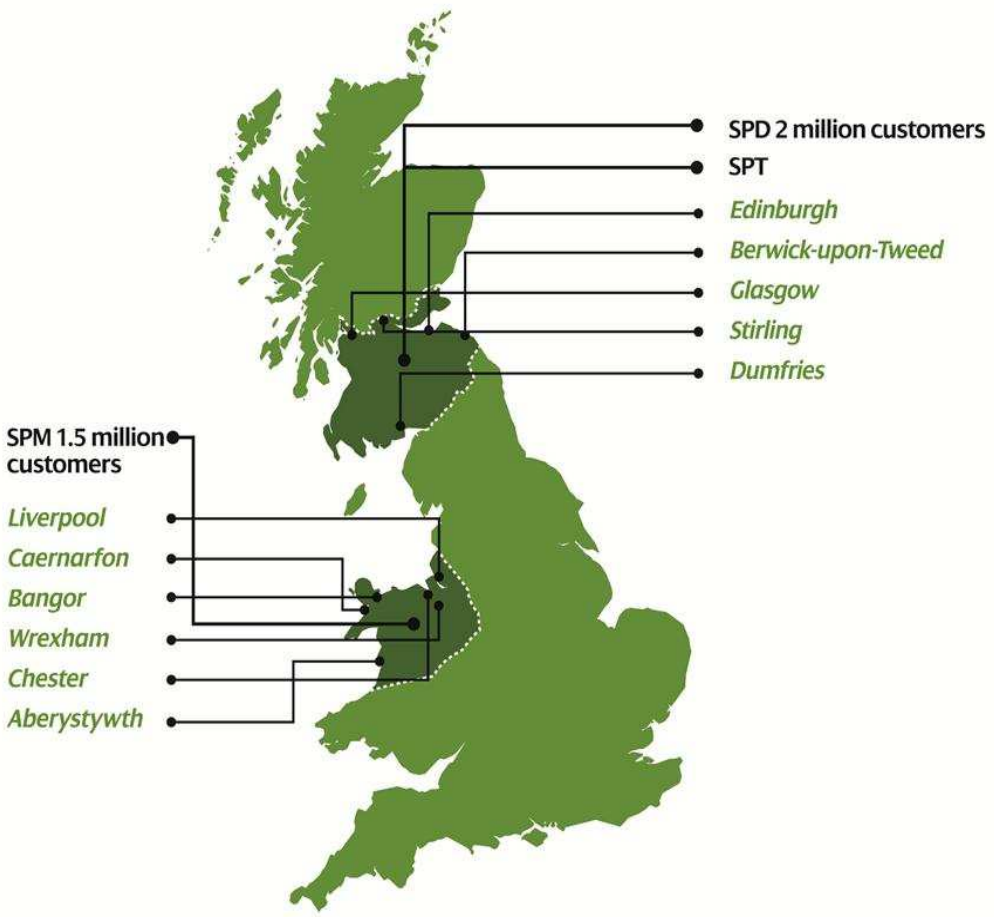
June 2016

Distribution Update

SP Energy Networks Overview

Distribution
(Scotland, England & Wales)

- 3.5million connected customers
- 16% of annual electricity bill
- 30% UK's distributed renewable generation but only 14% customers



Transmission
(Scotland only)

- 4% of annual electricity bill
- 56% of Scotland's transmission connected renewable generation
- Gateway South for all of Scotland's renewable generation

Our £1.56bn SP Distribution plan includes:

Delivering over 90 outputs and commitments

- Safety
- Environment
- Reliability & Availability
- Connections
- Customer Service
- Social Obligations

Maintaining and repairing the existing network

- Repair Network Faults
- Maintain & Replace Equipment
- Tree Clearing
- Storm Resilience

Accommodating development and growth

- Upgrade Major Substations
- Create Capacity for Future Customer Needs
- Connect Renewable Generation and Housing, Commercial & Industrial Customers
- Accommodate Load Growth

Our New Business Model

We have implemented a geographical business model, based on three aims:

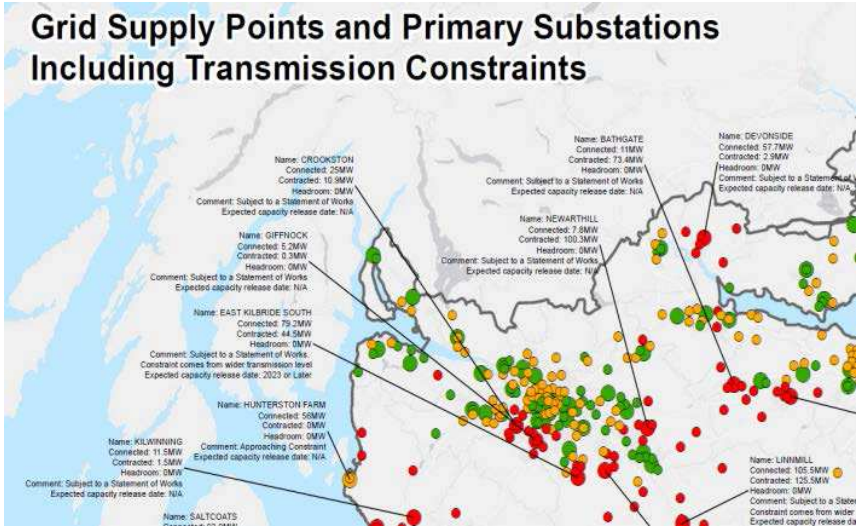
- Local autonomy
- More staff in local areas giving improved storm response and customer service
- Better coordination and greater flexibility of workforce
- Building enduring local relationships

- Improved processes and systems
- Lower back office costs
- Improved flow of information through organisation.

- Recruiting from the local area
- More customer and stakeholder facing
- Increasing flexibility to deal with future demands of smart networks and the low carbon transition.

Incentive through Connections Engagement (ICE)

- OFGEM* incentive
- Penalty only
- To drive electricity distribution network operators (DNOs) to understand and meet the needs of larger customers



- Led the development of ‘Heat Maps’ Launched our new Heat Maps in March
- Receiving around 300 ‘hits’ per week
- Launched a our ‘Export Limiting Device’ Policy in January – success
- Releasing Capacity by tackling ‘under-utilised’ capacity – limited success
- Addressing the issue of Queue Management – good feedback
- Proposed a new Statement of Works Process – should streamline process
- Providing ‘Alternative Connection Offers’ – limited uptake to date

SPD – Current and Future Generation

SPD	Connected (MW)	Accepted (MW)	Offered (MW)
Biomass	119	6	1
CHP	46	6	2
Diesel	7		
Feed In Tariff	107	105	
Gas (non-CHP)	84	57	10
Hydro	130	0	
PV	5	0	
Wind	1,132	1,280	33
Other	2	3	260
Total	1,633	1,457	306

- Work together on projects which impact the community
- Consultations
- Public Meetings
- Jointly support local events
- Working in the Community
- Who to contact

SP ENERGY NETWORKS

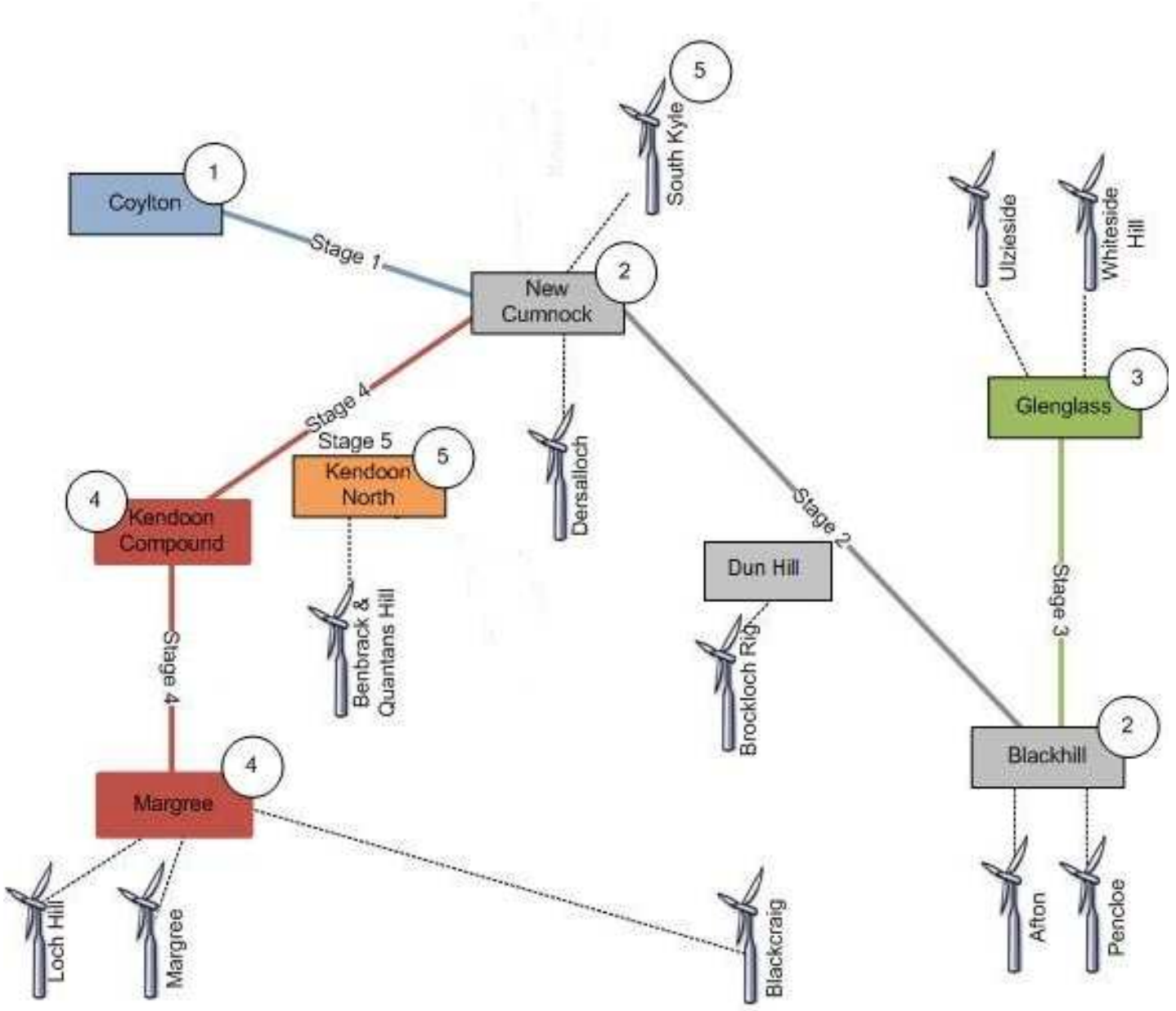
10th June 2016

SWS Developer Forum

Consenting Update

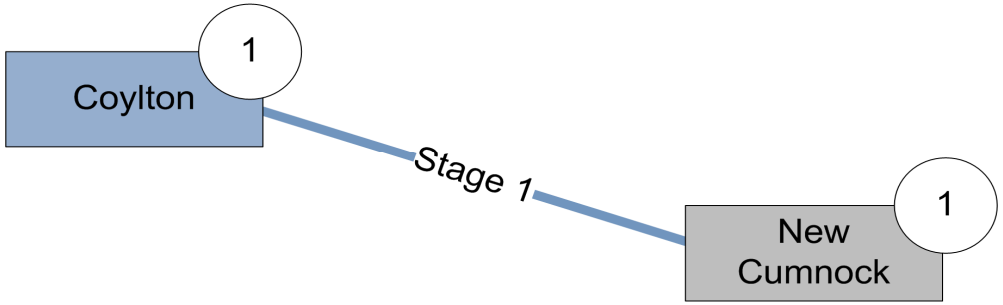
Ross Baxter

SWS Project Key Stages: Landowner and Planning Consents



Network Overview Diagram

SWS Project Key Stages: Stage 1 Key Infrastructure Works



COYLTON SUBSTATION – NEW CUMNOCK SUBSTATION

- Extension to existing 275kV substation at Coylton
- New 275kV substation at New Cumnock
- 14Km of 275kV overhead line

SECTION 37 CONSENT

- Section 37 consent granted Dec 12 – includes substations

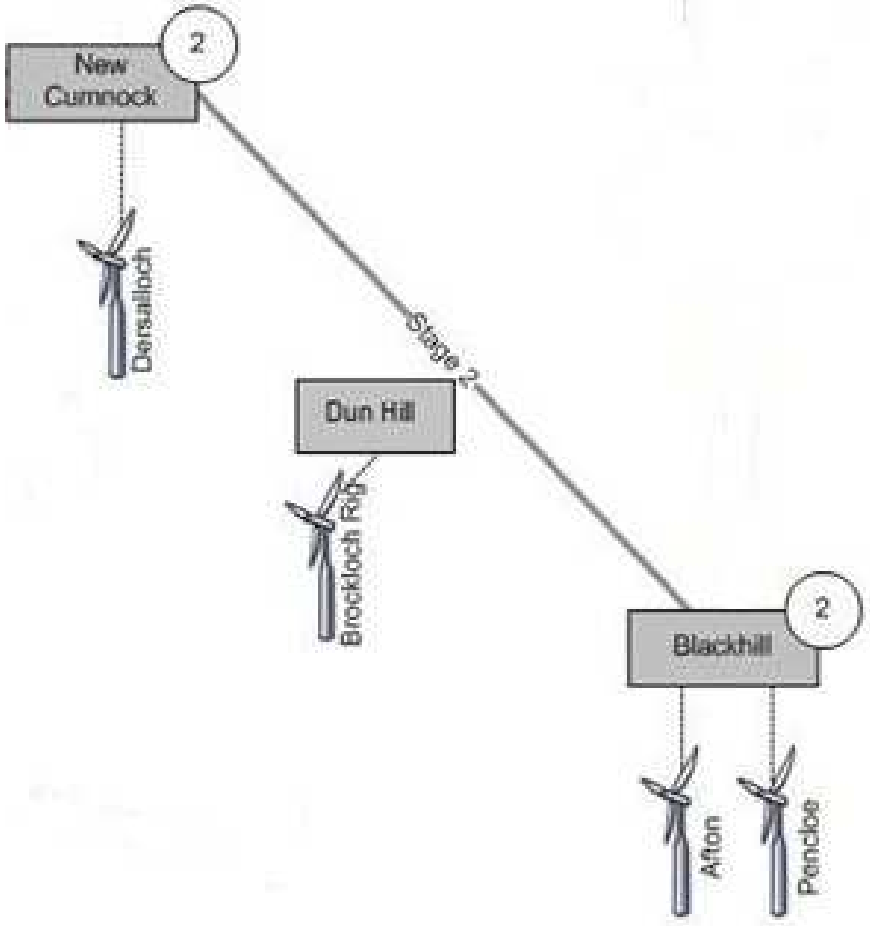
- Work on Overhead line complete, commissioning concluded 5th June 2016
- Substation works progressing – Coylton complete, New Cumnock to complete July 2016. landscaping to follow
- Removal of access tracks and reinstatement to progress 2nd half 2016
- Ongoing interaction with East Ayrshire Council
- Option for materials to contribute to opencast restoration being concluded

SWS Project Key Stages: Stages 2-3 Key Infrastructure Works

Stage 2

NEW CUMNOCK SUBSTATION - BLACK HILL SUBSTATION

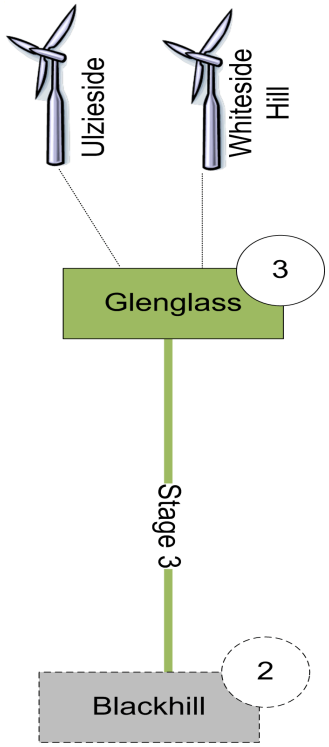
15km of 132kV steel tower line



Stage 3

BLACK HILL SUBSTATION – GLENGLASS SUBSTATION

13km of 132kV steel tower line



SWS Project Key Stages: Stages 2-3 Key Planning & Landowner Consents

SECTION 37 CONSENT

- Section 37 consents granted – Nov 14

LAND AGREEMENTS

- Dunhill, Black Hill and Glenglass substations – concluded
- Blackhill , Brownhill Rig, Gallowrig, Whitehill Quarries Mineral agreements - concluded
- Wellhill Quarry – concluded June 2016

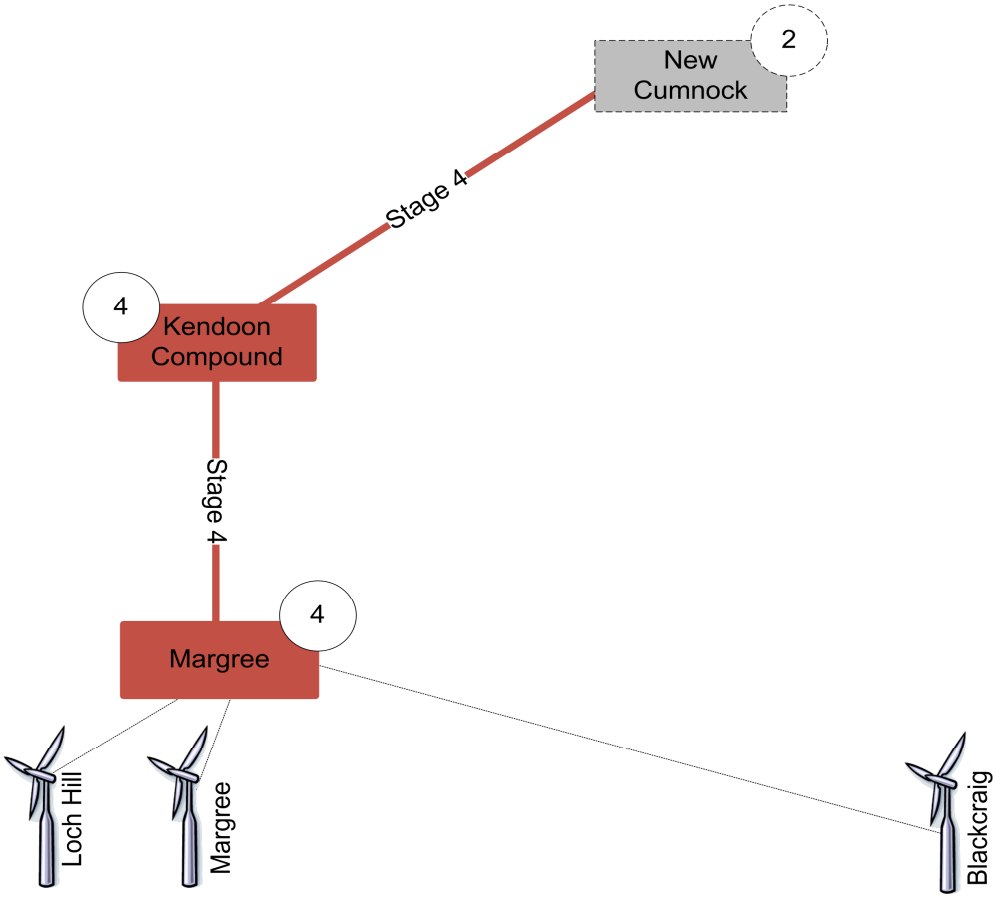
WAYLEAVES/SERVITUDES

- Wayleaves are concluded
- One remaining servitude being concluded – will not delay construction
- D&G - One quarry active, three quarries subject to D&G condition discharge
- EAC – Black Hill quarry subject to legal agreement for restoration and bond. Drafts progressing with lawyers

CONDITIONS

- D&G and EAC - All conditions discharged. Trees being felled and site preparation / ground works being mobilised / progressed

SWS Project Key Stages: Stage 4 Key Infrastructure Works



NEW CUMNOCK SUBSTATION - KENDOON CABLE SEALING END COMPOUND (CSEC) – MARGREE SUBSTATION

- New 275kV substation at New Cumnock
- Kendoon Cable Sealing End Compound
- 24 Km of 132kV steel tower overhead line
- 10.4Km of 132kV woodpole overhead line

SWS Project Key Stages: Stage 4 Key Planning & Landowner Consents

SECTION 37 CONSENT

- Scottish Government Section 37 determination – Feb 15

LAND AGREEMENTS

- Margree and Blackcraig substations – Complete

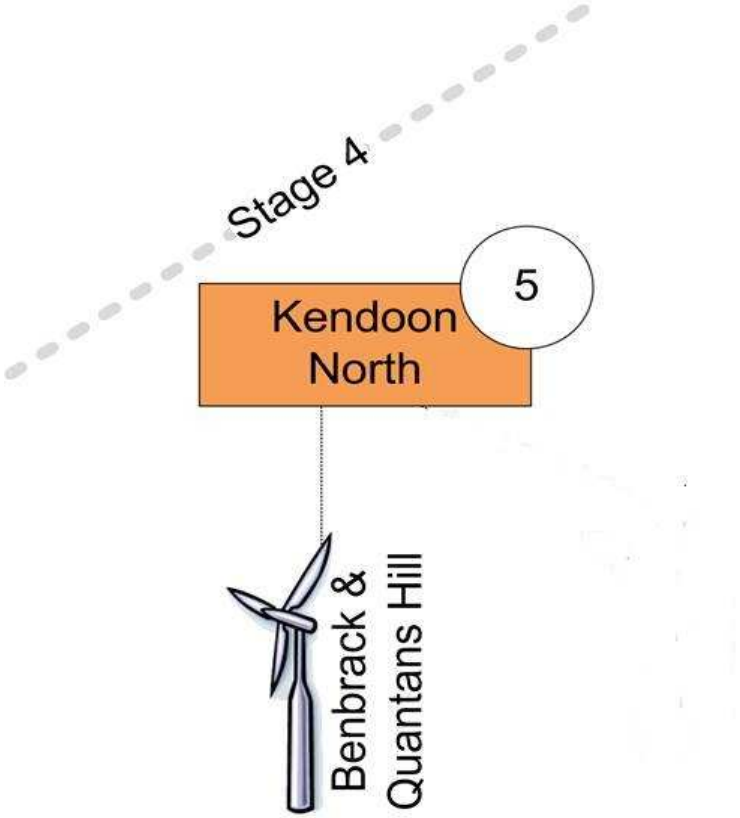
WAYLEAVES/SERVITUDES

- One remaining servitude to conclude – anticipated end July 2016

CONDITIONS

- EAC & D&G suspensive conditions discharged for steel tower element / Trees being felled and site preparation / ground works being mobilised / progressed
- D&G remaining suspensive conditions for wood pole and substations anticipate by mid June 2016

SWS Project Key Stages: Stage 5 Key Infrastructure Works



KENDOON NORTH SUBSTATION

(ON ROUTE OF STAGE 4 OVERHEAD - NEW CUMNOCK – KENDOON CSEC)

- Substation location now defined.

SWS Project : Consents Summary

Stage 1 – Overhead line works complete, reinstatement to progress this year
Substation works complete by July 2016

Stages 2 / 3 - consent conditions all approved. Site works under way

Stage 4 - Section 37s granted
Discharge of conditions for steel tower complete. Site works underway.
Final condition for D&G (wood pole section) anticipated mid June 2016.
Agreement reached to commence site tree clearance works at Blackcraig.

Stages 2,3,4 - last remaining landowner agreements key

Stage 5 – Revised design solutions being progressed by SPEN

SP ENERGY NETWORKS

10th June 2016

SWS Developer Forum

Delivery Update

David Raftery
Bob McGuire

Project Progress Stage 1: Coylton - New Cumnock

- All works substantially complete
- Access removal delayed in some cases to allow landowners to seek consent to keep tracks
- Energisation of 275kV New Cumnock Substation and WA Route Overhead Line successfully completed on 5th June 2016
- Delay from Q1 in part due to availability of network outages
- Energisation of windfarm connecting direct to New Cumnock scheduled to complete Q3 2016.

Project Photographs

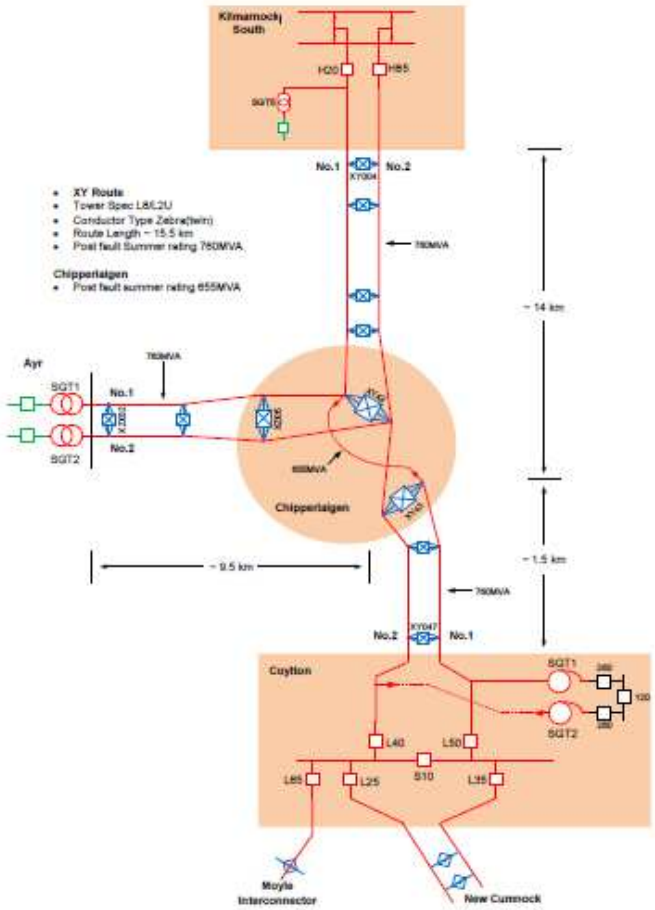
Tower Reinstatement

Completing Final Overhead Line Connection at new Cumnock

New Cumnock 275/132kV Substation

SP-RI-142 Kilmarnock South – Coylton 275kV (XY Route) Uprating

- Uprating of Coylton to Kilmarnock Cumnock Circuits
- Current rating 600MVA
- New rating 1500MVA
- New twin Drake ACCR Conductor
- 2016 OHL outage works ongoing
- Civil works at new Chipperlagan GIB compound have commenced
- Completion planned for end of 2016



XY Route between Coylton and Kilmarnock South

SWS Project Progress (Stages 2 – 4)

Stage 2 New Cumnock – Blackhill

Stage 3 Blackhill - Glenglass

Progress since Dec 2015 SWS Developer Forum

Land Agreements: Target indicated at last forum was completion of all agreements Dec 2015

Actual: Blackhill S/S lease secured Jan 2016
Glenglass S/S lease secured April 2016
Quarries 2 x secured Jan 2016 / 2 x secured April 2016 / 1x secured June 2016.

Wayleaves / Servitude: Target indicated at last forum was completion by Dec 2015

Actual: 1 x servitude secured Dec 2015 / 1 x servitude secured Feb 2016

Consent Discharge: Target indicated at last forum was completion Dec 2015

Actual: EAC consent conditions discharged Feb 2016.
Quarries 1 x discharged with D&G April 2016 / 3 x pending D&G anticipated June 2016
1 x pending EAC anticipated July.

SWS Project Progress (Stages 2 – 4)

Stage 4 New Cumnock - Margree

Progress since Dec 2015 SWS Developer Forum

Land Agreements: Previously completed

Wayleaves / Servitude: Target indicated at last forum was completion by Jan 2016

Actual: 1 x servitude secured Jan 2016
1 x servitude remains outstanding for 7 towers, agreement in principle reached targeting July conclusion

Consent Discharge: Target indicated at last forum was completion D&G Dec 2015
EAC Jan / Feb 2016

Actual: D&G consent conditions discharged Dec 2015 steel tower section
EAC consent conditions discharged May 2016 steel tower section
D&G remaining consent conditions anticipated Jun 2016 for wood pole section

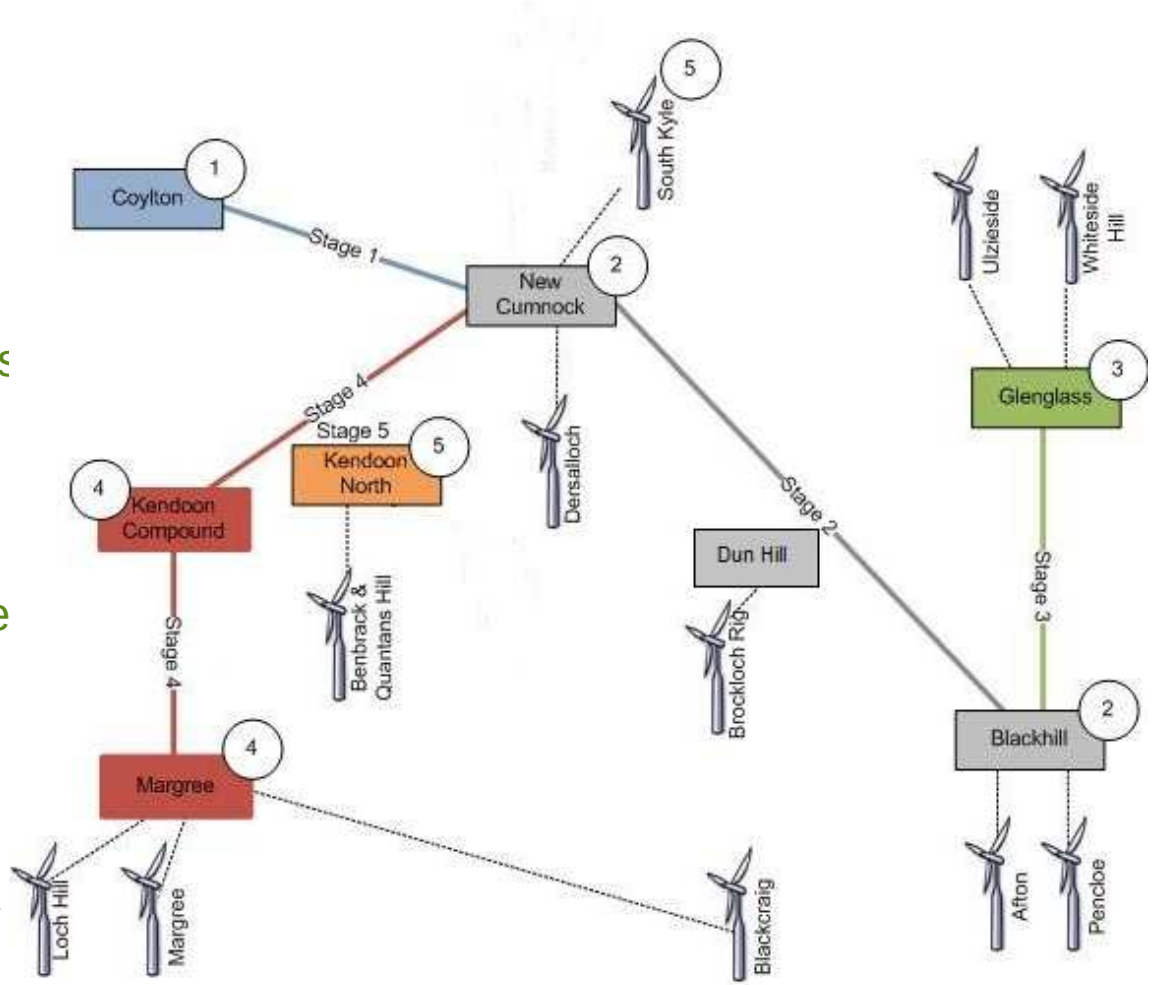
SWS Project Progress (Stages 2 – 4)

Stage 2 New Cumnock – Blackhill

Stage 3 Blackhill - Glenglass

Stage 4 New Cumnock - Margree

- £71m expenditure to date.
- £87m future expenditure in 2016 / 2017.
- Steel tower overhead line main construction mobilisation complete / access works in progres
- Quarry operations commenced Brownhill Rig
- Tree cutting works in progress 60% route corridors cleared / 350 Hectares felled / mulche
- Platform clearance / mobilisation commenced Blackhill and Glenglass Substations sites. Dunhill platform and civil works in progress.
- Manufacture of 275kV transformers and 132kV GIS and 33kV switchgear in progress.



Network Overview Diagram

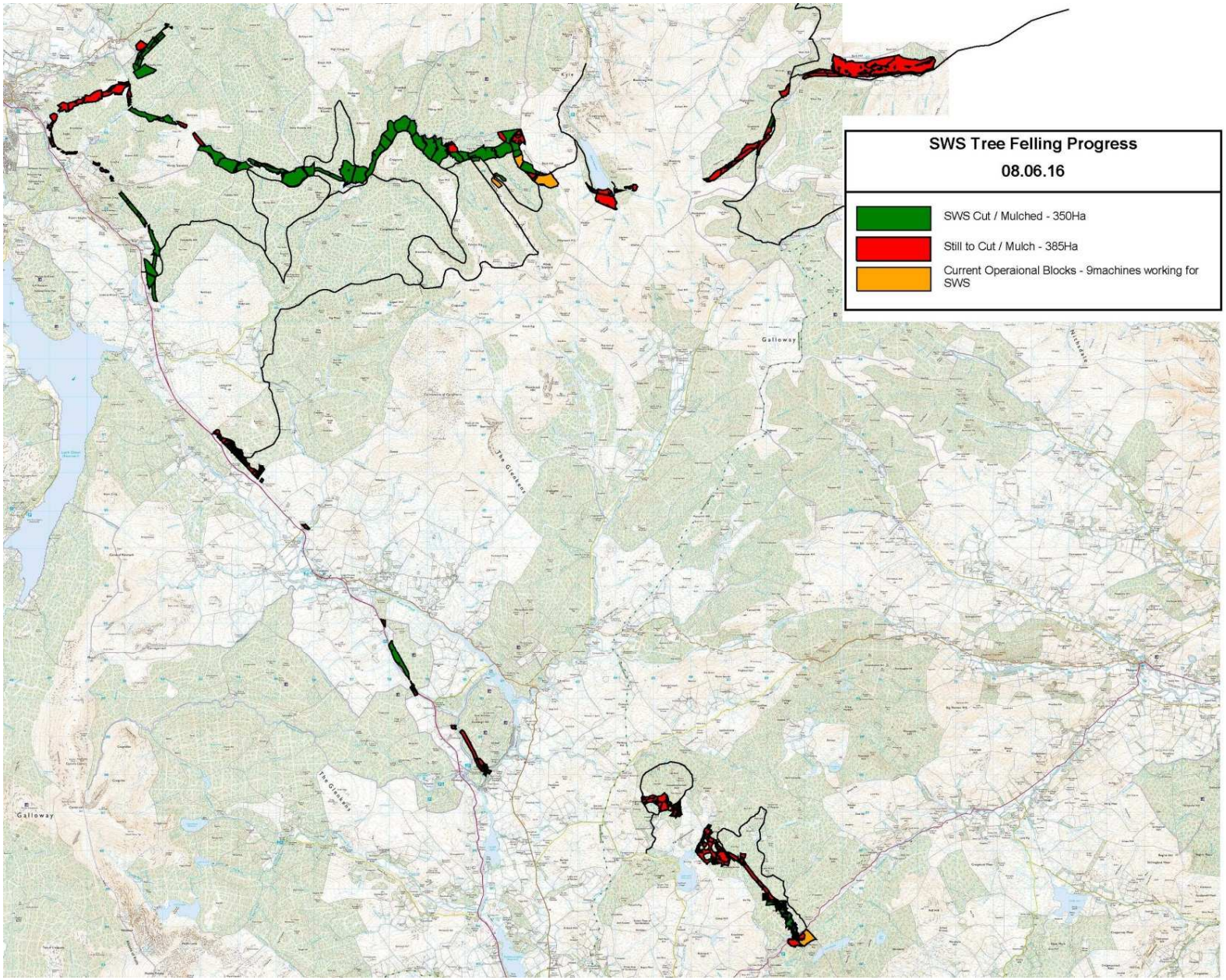
SWS Project Progress (Stages 2 – 4)

- Platform / civil / control building construction contracts now awarded for Blackhill and Glenglass substations.
- Tender evaluation in progress for remaining cable and electrical works packages for Blackhill and Glenglass Substations.
- Contract awarded wood pole overhead line Margree – Blackcraig.
- Q2 of 2017 for completion of SP-RI-114 /145 infrastructure to Dunhill.
- Q3 of 2017 for completion of SP-RI-116 / 022 infrastructure to Blackhill and Glenglass substations.
- Q3 of 2017 for completion of SP-R1-111 infrastructure.
- SP-R1-034 Margree collector substation on hold. Progressing detailed design to bypass Margree collector site.
- Energisation of customer connection Q2 2017 from Dunhill Substation in line with current contract date.
- Energisation of customer connections Q3/4 2017 Blackhill / Glenglass Substations and Blackcraig in line with current contract dates.

SWS Project (Stages 2 – 4) Key Risks Remaining

- Discharge Conditions Stage 4: Remaining conditions to discharge for wood pole section
- Conclusion of land agreements with 1 x remaining landowner (Stage 4) agreements in principle reached.
- Conclude discharge of consent conditions for 3 quarries in D&G area.
- Conclude planning permission / consent discharge for 1 x quarry in EAC area.
- Major construction activities through winter period.

SWS Tree Cutting Progress



SWS Project Tree Cutting Route B

SWS Project Tree Cutting Route B

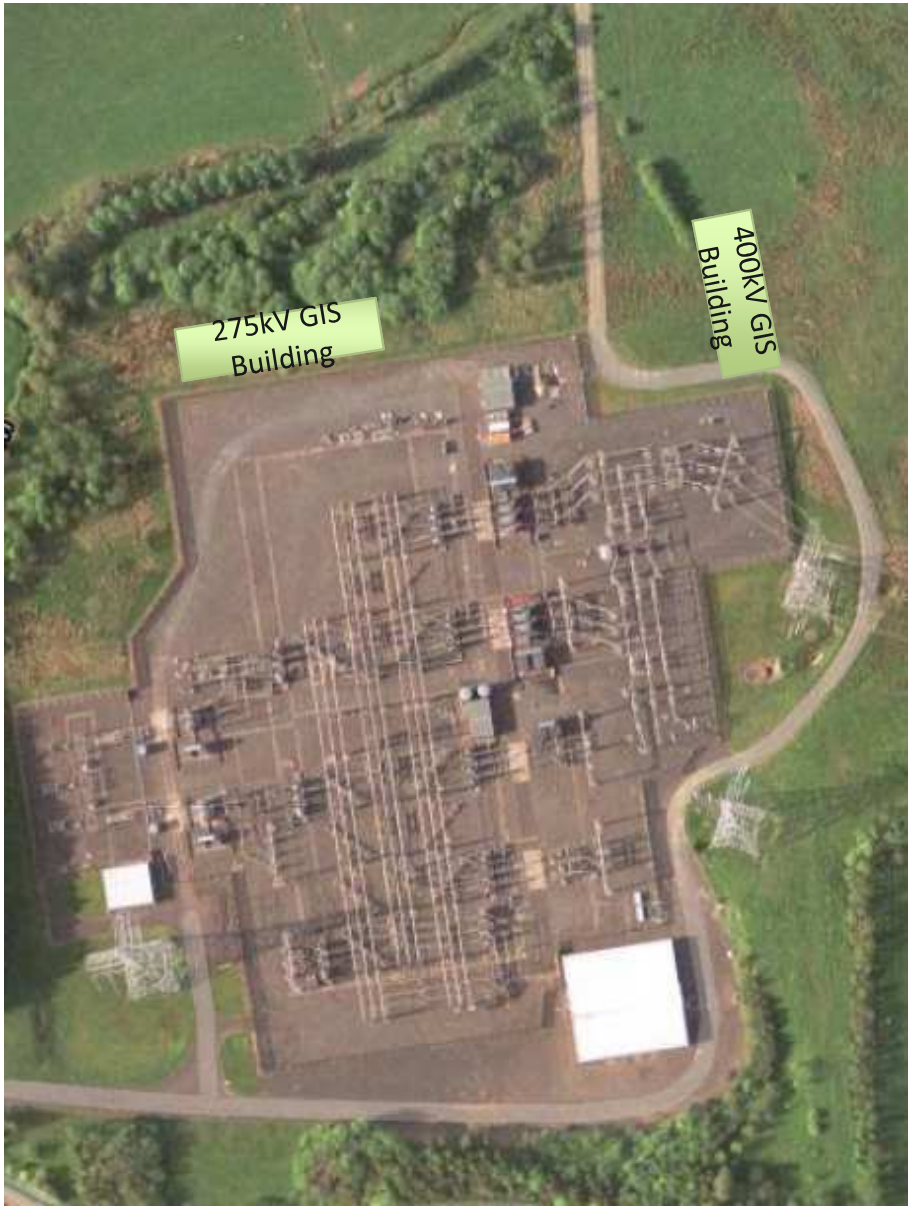
SWS Project Tree Cutting route D

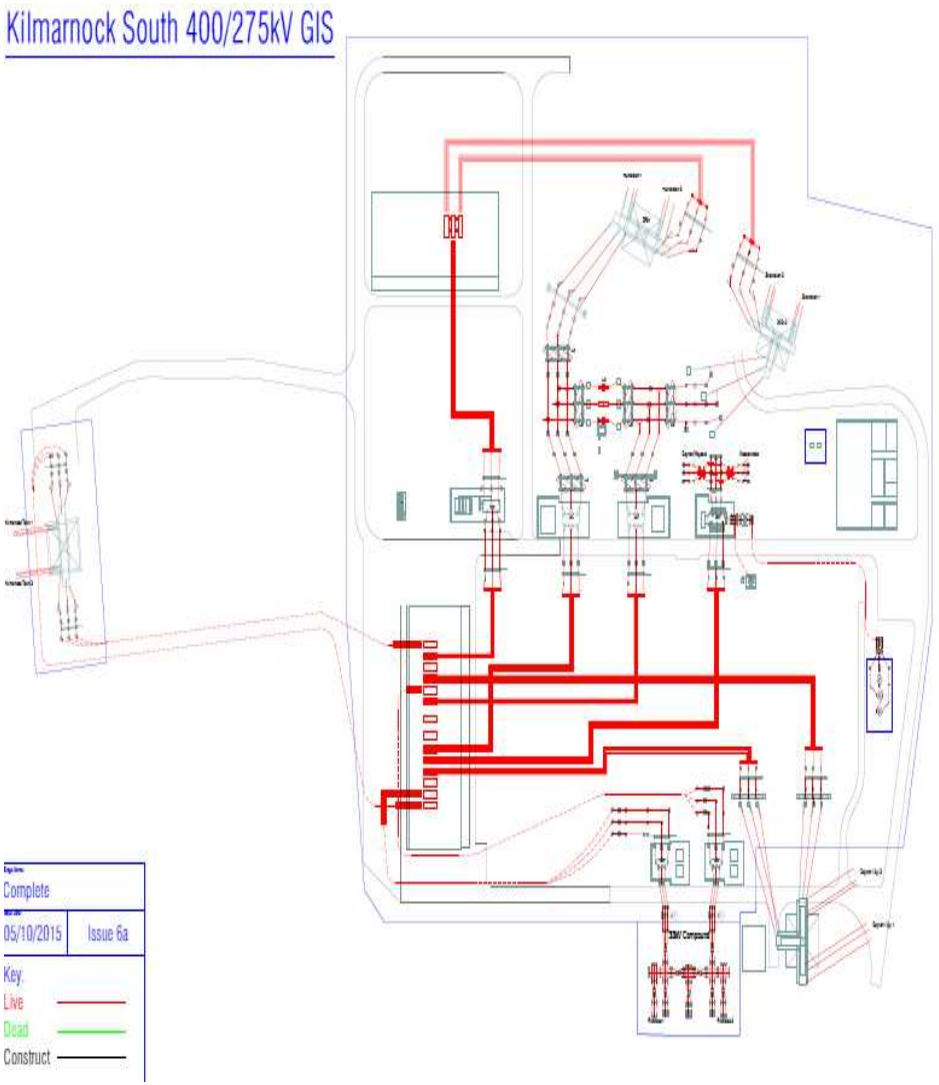
SWS Project Progress Photos Brownhill Rig Quarry

SWS Project Progress Photos Access Installation

TORI 143 – Kilmarnock South Uprating

Construct new 275kV and 400kV GIS Substation and Installation of a third 1000MVA 400/275kV auto wind transformer





Overview

- Construct new 275kV and 400kV GIS Substation and Installation of a third 1000MVA 400/275kV auto wind transformer
- Programme review in conjunction with initial electrical design, detailed construction phasing and outage planning now complete - the outcome of which drives a November 2019 project completion date.
- Subject to overload protection design works, system access in 2018 for developments currently contracted for 2018 will be maintained.
- Tripartite engagement has been undertaken with affected Users on completion of the design work

Project Progress

- Planning Consents in place for new GIS buildings
- 275kV and 400kV GIS contracts awarded
- Civil enabling contract awarded
  - – site works commenced 30th May
- GIS Building tender currently in progress, Q2 2016 award
- Civil works tender in progress
- OHL contract due for award by end of June
- Transformer tender in progress
- In summary: on programme

SP ENERGY NETWORKS

Transmission Programmes

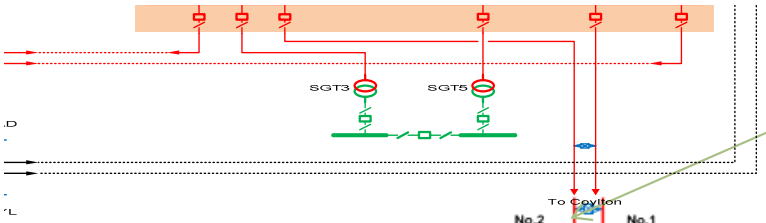
10th June 2016

South West Scotland Forum

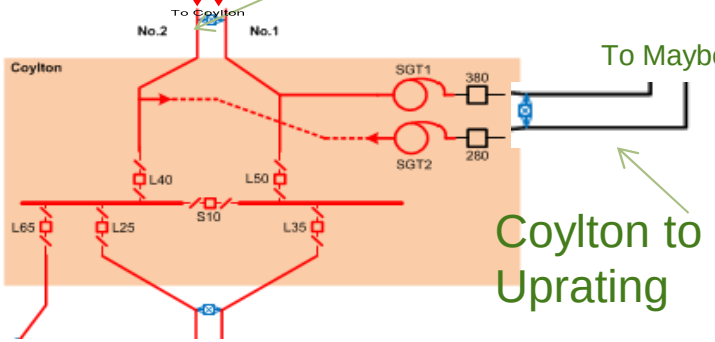
Development Update

John Rodger

Kilmarnock South
Uprating now in delivery



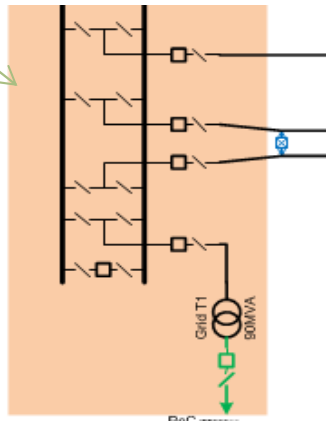
Kilmarnock South to
Coylton 3rd Circuit



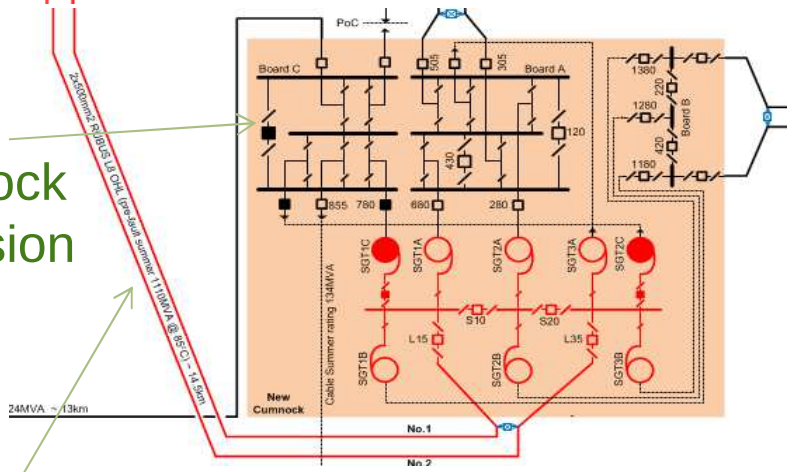
To Maybole

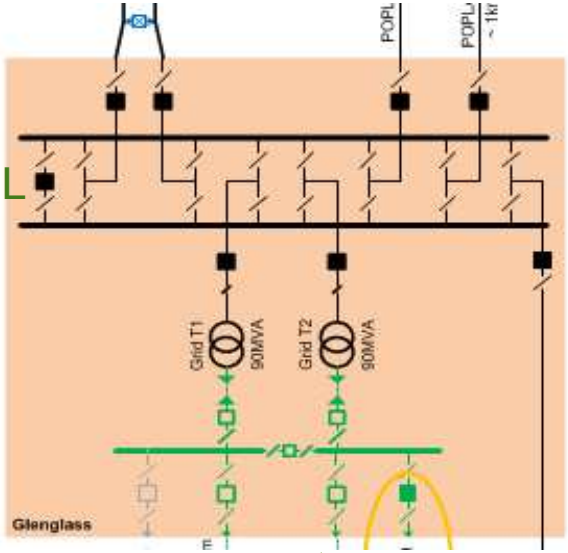
Coylton to Maybole OHL
Uprating

Reduced Kendoon
North 132kV
Substation



New
Cumnock
Extension

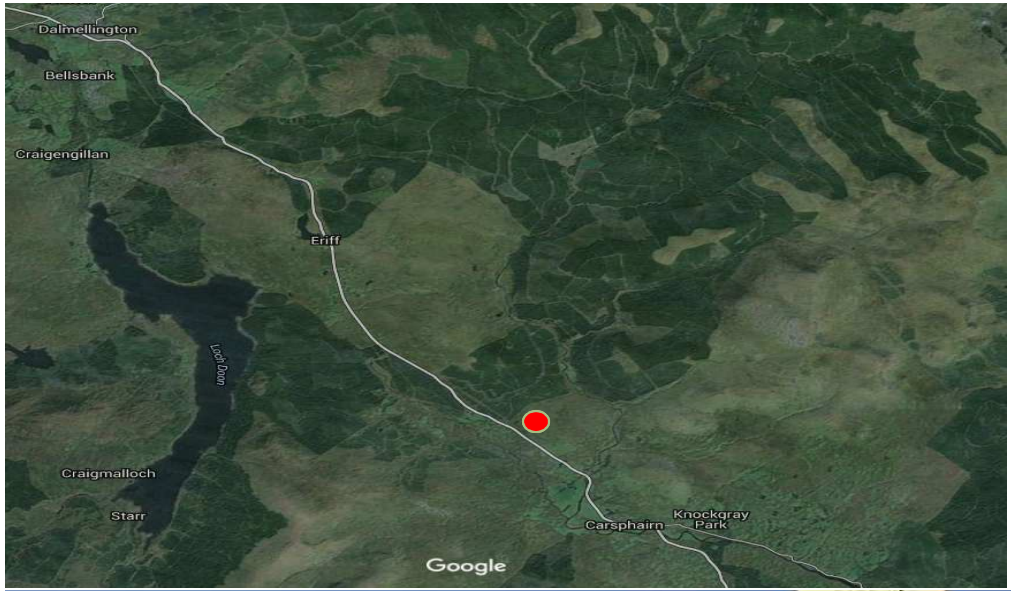




Coylton to New Cumnock
WA route Uprating

Glenglass Double Bus
Substation

TORI 134 Kendoon North Substation



- December forum discussed constructing new 132kV GIS substation and install new 275/132kV 240MVA transformer at New Cumnock 275kV substation
- Due to changes in the contracted background we have halted the tendering of the GIS that was in progress to review the system design requirements and separated the New Cumnock transformer into a new TORI
- Kendoon North site location public consultation complete and progressing towards planning submission Q3 2016 subject to design review
- Currently on programme for Q4 2019 completion
- Contracted generation 198MW (254MW in Dec) with zero MW consented

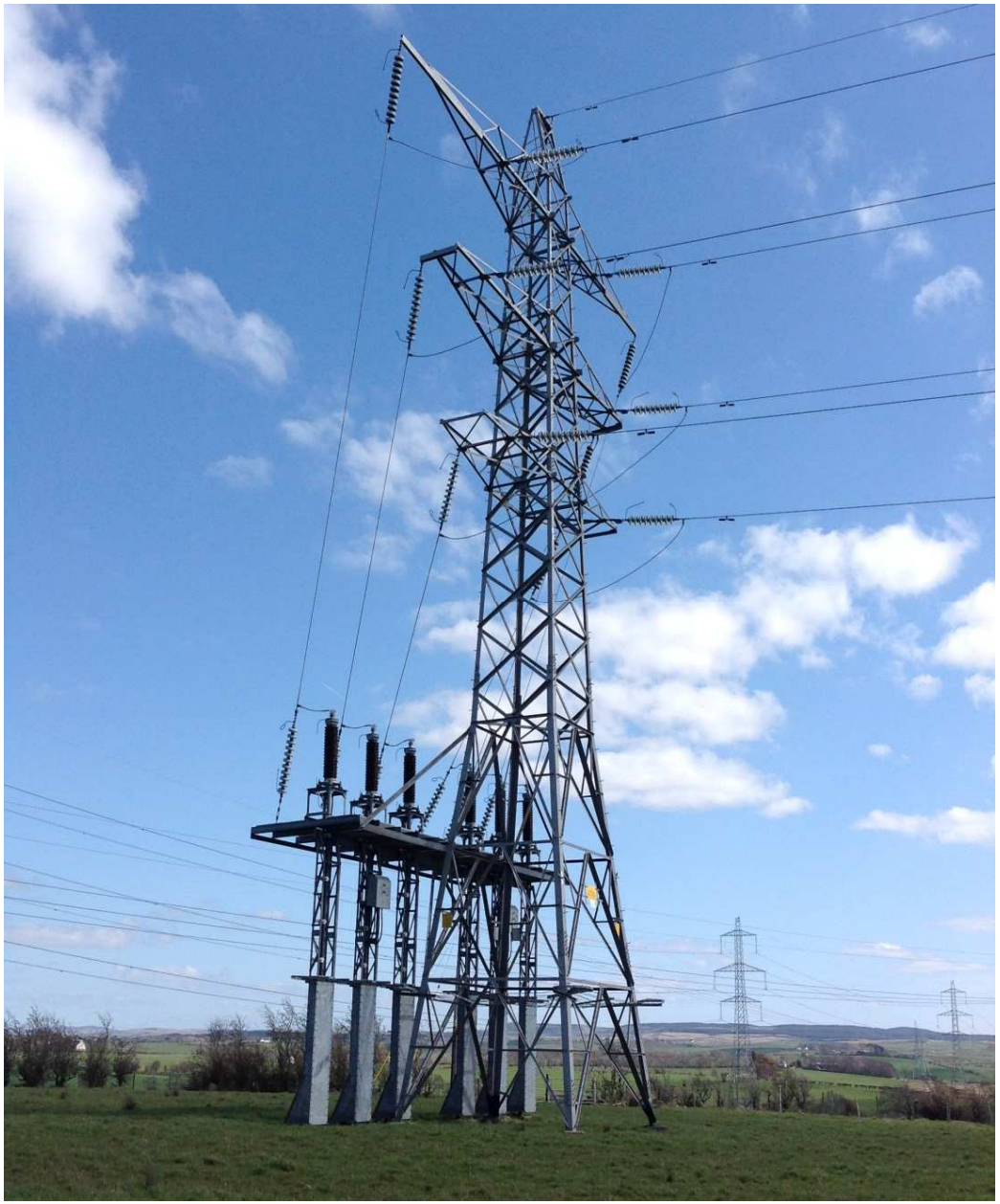
TORI 158 - New Cumnock Substation Extension

- Extend double bus bar to create Board C and install 2 new 275/132kV 240MVA units (SGT1C and SGT2C)
- Contracted generation has increased since December (372MW) to 472MW now with 48 MW consented
- Target completion date Q4 2020

TORI 146 – Coylton to Maybole Circuit Uprating

Sealing end tower south of Coylton substation.
Existing X route shown, which will be replaced by new line.

- Construct 23km of new 132kV double circuit overhead tower line
- Environmental consultants now completed route options with view to progress to public consultation in Q3 2016
- High level technical review of route options now complete
- Target completion Q4 2022
- Contracted generation has increased from December (30MW) to 52.6MW and 30MW consented with now only 33MW (150MW) on offer awaiting acceptance



TORI 147 Kilmarnock South to Coylton

Kilmarnock south to Coylton existing line.

- Construct 16km of new 275kV double circuit overhead tower line and reinforce Coylton SGT1 and SGT2 to 240MVA
- Environmental consultants now completed route options with view to progress to public consultation in Q3 2016
- High level technical review of route options now complete
- Target completion date Q4 2022
- Contracted generation has increased from December (857.2MW) to 1022.9MW with 120.7MW consented

Project Progress (Stage 5 and Beyond)

TORI 160 - WA Route Uprating

- Reconductor 14.5km between Coylton and New Cumnock
- Contracted generation has increased from December (438MW) to 538MW with 48MW now consented
- Largest standard conductor used for existing project, change in contracted position now requires reconductoring using HTLS, currently being trialled.
- Target Completion date Q4 2022

TORI 173 - Glenglass Double Busbar Substation

- At the proposed Glenglass 132kV Substation, install a new 132kV GIS double busbar substation with eight bays.
- Continually reviewing design requirements based the contracted background
- No change in contracted capacity since December, 277.4MW contracted but now with 48 MW consented
- Target completion date October 2020

Project Progress (Stage 5 and Beyond)

Following the completion of the reinforcement works we will have increased the capacity in the SWS area south of Kilmarnock South Substation by 1000MVA firm capacity creating a combined Firm capacity of 2000MVA and 3000MVA non-firm.