

Grid System Operation

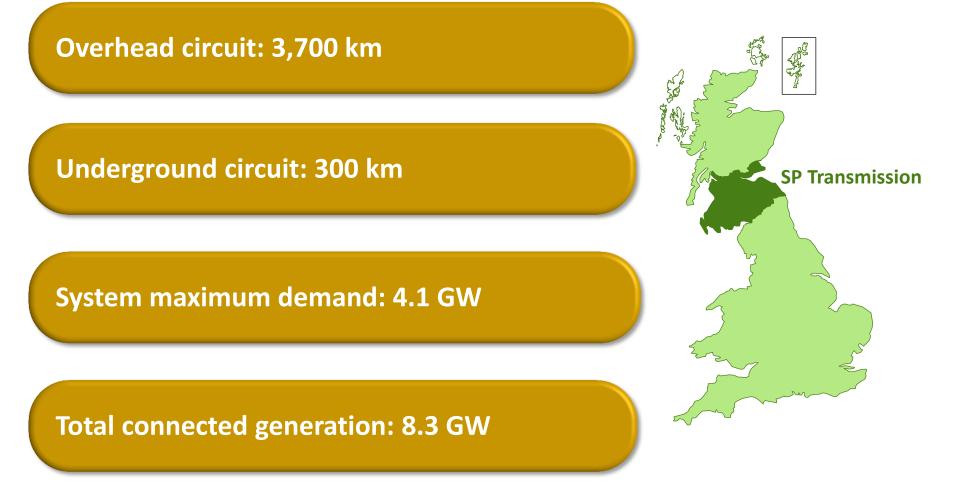
Milorad Dobrijevic – SPEN OCC Network Planning Manager

Graham Wood – SSE Outage Planning Manager

SP Energy Networks

SP Transmission Today





SP Transmission Investment over RIIO-T1

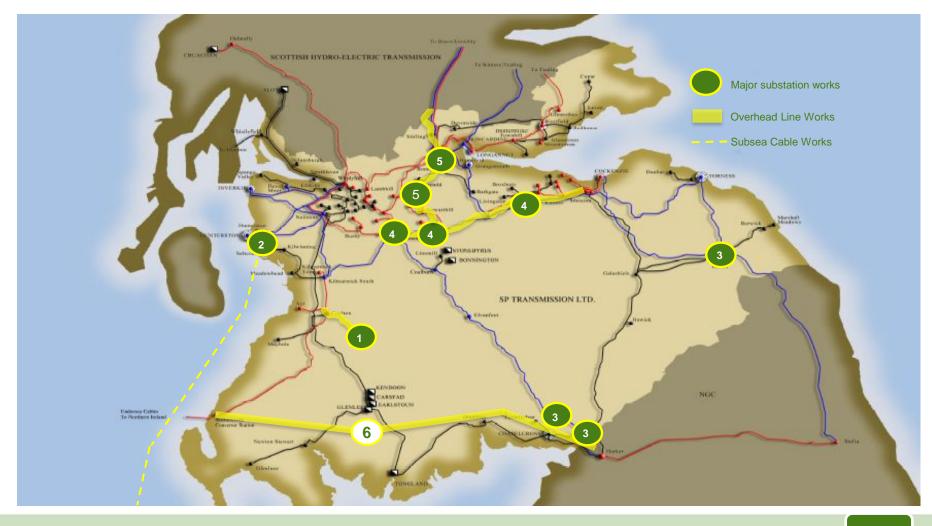


Approx 11GW of additional wind connections				
Will create 1500 jobs across the supply chain	Scotland – England Transfer Capacity (MW)	Delivery Date		
	850	1990		
Increase network export capacity from 3GW	1600	1993		
to 7GW	2200	2000		
	2800	2010		
Network modernisation to maintain excellent	3300	2013		
security of supply and reliability	4400	2015		
Constraint costs reduced by £1.7 billion as a	6600	2015*		
result of this investment	*6600MW Delivered follo Western HVDC Link	Delivered following completion of VDC Link		

Transmission Infrastructure Critical to Delivery of Scottish Energy Policy

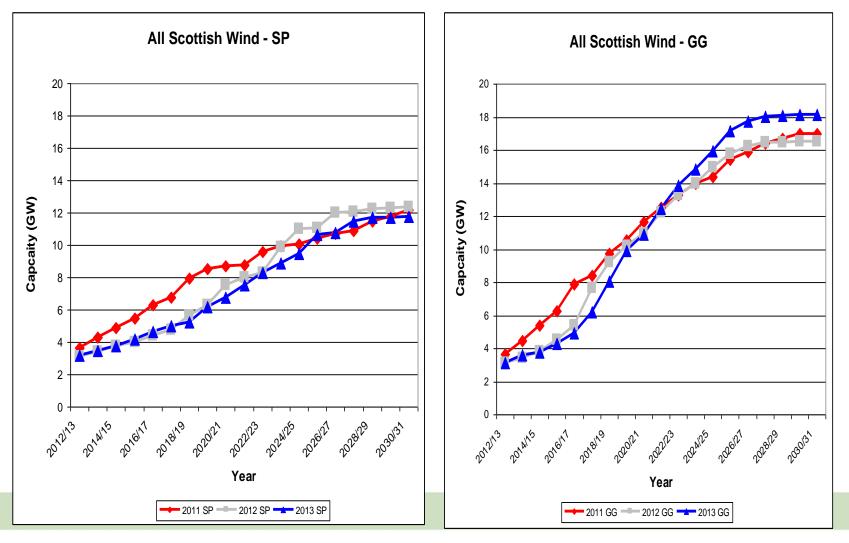
Strategic Transmission Upgrades





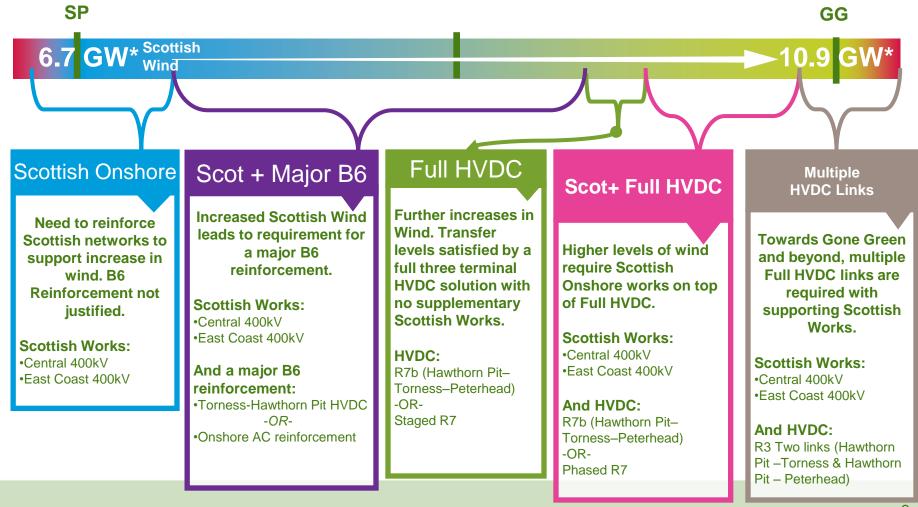
Wind Generation in Scotland SP and GG



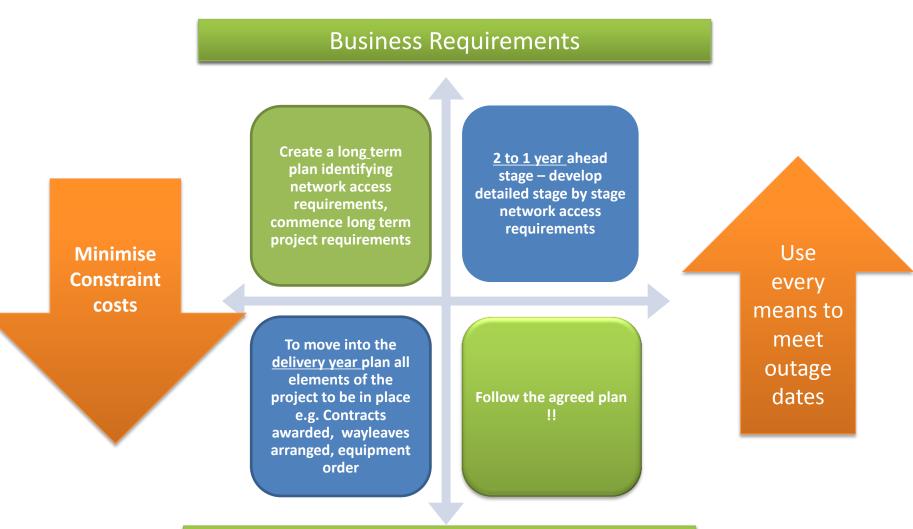


Wider System - "Optimum Reinforcement Dependent on Scenario Out-Turn





Network Access Policy - Overview



Safety, Network Security & Economically

Network Access Policy – Implementation

Long Term Planning		Short Term Planning				
Year 8> Year 3	Year 2	Year 1	Year 0			
			52 to 5 week	4 weeks to 1 week	Week ahead	
Agree Project delivery Identify stakeholder requirements Agree maintenance requirements Agree maintenance requirements Agree maintenance requirements Network Access windows Commence Wayleaves \ Procurement process \ Contract placement etc Contingency planning \ Distribution reinforcement Identify Transmission \ Distribution major project interfaces	Develop the delivery plan Network Access requirement detail Network access fixed – End of year 1 Project – Wayleaves \ contracts \ Procurement to be in place before entering delivery year		<text></text>			
DEVELOPING THE PLAN		DELIVER THE PLAN				

Network Access Policy – Change Control Process & Enhanced Services

Long Term Planning Phase		Short Term Planning Phase				
Year 8 ──→ Year 3	Year 2	Year 1	Year 0			
Project scope identified – High level design developed based on TO's regulatory funding	Build contingency circuits e.g. Trident bypass lines	52 to 5 week4 weeks to 1 weekWeek aheadYear 0 – Outage change control process developed. This will manage any TO \ SO driven outage change to ensure overall network constraint costs are taken into accountTO can provide enhanced services e.g. 24/7 working, short term rating enhancements, bring forward \ delay new outage dates to meet SO requirementsSO & TO's will work closely together to ensure network remains safe & secure with manageable constraint costs while the TO's deliver their RIIO outputs efficiently				
 Project scope reviewed - Identify project enhancements that will assist SO in reducing constraint cost on the network Submit a design change control document to SO to allow design changes to be agreed and funding established Future Proof the Network within reason !!!! 	Carry out distribution reinforcement to prevent transmission circuits being used as contingency circuits Develop contracts including 24\7 working to reduce working time on the network Bundling of outages e.g. Ensure maintenance and capital work is carried out at the same time if possible					

