Type	No.	ref	Uncertainty Area	Risk Description (Cause, Effect, Consequence)	Key Impact Area	Opportunity (Y/N)	Option Block	Probability	Impact	Risk Classification	Other Comments
CM	1	CM-1	Refurbishment Scope for Avon Unit	**Cause:** Conceptual phase engineering to date. No in-depth condition assessment survey carried out for Avon Units A and B. **Effect:** Uncertainty in the 're-life' scope modifications and whether all areas of concern have been captured. Potential for 're-life' component scope growth. **Consequence:** CAPEX increase.	CAPEX	N	**Retrofit Options**	**H**	**M**	**Major**	Includes destruct elements. Uncertainty in scope division between 'asset health' and project scope. Some scope growth may be covered under asset health rather than project expenditure. No current survey of unit and accurate understanding of refurbishment scope. Cab refurbishment planned 2022/23 under asset health plan.
CM	2	CM-2	Compressor Outage Window for Avon Unit Refurbishment	**Cause:** Conceptual phase engineering to date. No in-depth condition assessment survey carried out for Avon Units A and B. **Effect:** May not be possible to undertake work within planned compressor outage window. Additional shutdown required. Loss of production. **Consequence:** Production outage.	Production Outage	N	**Retrofit Options**	**M**	**L**	**Minor**	Machines are currently running permanently given geo-political situation and expected to continue for next 3 - 5 years. No fixed annual T&I to coordinate with - planned summer outage period. Can be performed over two seasons. 6 month period available over the summer, but work may take 6 months to complete as part of base schedule. Potential additional isolation considerations for continuing into winter period. Mitigation is full site survey. Significant brownfield scope for SCR option which is a vertical arrangement so most of the instllation work will be conducted during outages
CM	2	CM-2	Compressor Outage Window for Avon Unit Refurbishment	**Cause:** Conceptual phase engineering to date. No in-depth condition assessment survey carried out for Avon Units A and B. **Effect:** May not be possible to undertake work within planned compressor outage window. Additional shutdown required. Loss of production. **Consequence:** Production outage.	Production Outage	N	**SCR Option**	**H**	**L**	**Significant**	Machines are currently running permanently given geo-political situation and expected to continue for next 3 - 5 years. No fixed annual T&I to coordinate with - planned summer outage period. Can be performed over two seasons. 6 month period available over the summer, but work may take 6 months to complete as part of base schedule. Potential additional isolation considerations for continuing into winter period. Mitigation is full site survey. Significant brownfield scope for SCR option which is a vertical arrangement so most of the instllation work will be conducted during outages
CM	3	CM-3	Tie-In to Existing Underground Process Piping	**Cause:** Conceptual phase engineering to date. No underground piping survey has been carried out. Potential for areas of damaged/corroded pipework. **Effect:** Potential for brownfield scope increase. May need to remove more sections of pipe that expected/replace damaged pipe. **Consequence:** CAPEX increase.	CAPEX	N	**New Build Options**	**M**	**L**	**Minor**	Suction and discharge pipework for units A and B has been inspected and corrosion defects repaired as part of recent asset health investment.
CM	4	CM-4	Re-Use of Existing Underground Process Piping	Conceptual phase engineering to date. No underground piping survey has been carried out. Requirement to re-use existing production piping infrastructure for all options. Potential for more extensive damage/lower integrity of pipework than currently expected. Requirement to replace large sections of underground pipework. All compressors currently use existing pipework. Wider site risk, not a project risk.							Data regarding site pipework to be provided.
CM	5	CM-5	Increased Flows Through Site Pipework	Flow through site will be increased as a result of the Western Gas Project but no change to the current design limits are envisaged. No intention for MCPD project to increase flow rates above current design limits.							Data regarding site pipework to be provided.
CM	6	CM-6	Reliability of Avon Unit	**Cause:** All retrofit options rely on use of existing Avon compressor. Compressor is approximately 30 years old. **Effect:** Risk that ageing asset does not meet availability requirements (even with re-life works) and experiences a higher degree of production outages than currently anticipated. **Consequence:** Loss of availability and increased OPEX.	Availability	N	**Retrofit Options**		**M**		Base estimates already account for reduced availability and increased OPEX of retrofit machine. RAM model and site availability model.
CM	7	CM-7	Lack of Vendor Support	**Cause:** Avon Units are obsolete and no longer supported by OEM. **Effect:** Avon Units are unsupported from a maintenance perspective for the design lifetime. Become increasingly reliant on used parts, with potential issues associated with wider package support and ancillary equipment items. Risk that machine is not viable to keep in operation, resulting in a requirement to replace. **Consequence:** CAPEX impact.	CAPEX	N	**Retrofit Options**	**VL**	**VH**	**Minor**	Currently licensed service providers that can support. NG have other Avon units that can potentially be cannibalised as well as a 1533 spares holding.
CM	8	CM-8	Existing Control Systems (DCS/ ESD/ F&G) Tie-In	Conceptual phase engineering / no extensive electrical site survey has been carried out. Existing control systems are old and/or obsolete. Ongoing plan to replace entire station control system in place. Not considered to be a project risk.							Intended to be replaced by 2026.

Type	No.	ref	Uncertainty Area	Risk Description (Cause, Effect, Consequence)	Key Impact Area	Opportunity (Y/N)	Option Block	Probability	Impact	Risk Classification	Other Comments
CM	9	CM-9	Remote Control Upgrades	**Cause:** No modifications to central remote control systems currently included in scope for tie-in of new build options. **Effect:** Potential increase in scope to modify remote controls. **Consequence:** CAPEX increase.							
CM	10	CM-10	Compressor Selection	**Cause:** Current basis for new compressors is [redacted] compressor, as per ERP3, which has been used for generation of cost estimates. No other machines have been considered to date. **Effect:** Potential for different machine to be selected at increased cost. **Consequence:** CAPEX impact.	CAPEX	N	**New Build Options**	**VL**	**VL**	**Negligible**	Cost is conservative in terms of footprint size etc. Cost includes all National Grid compliance elements. [redacted] tend to be the more conservative cost compared to other vendors.
CM	11	CM-11	Compressor Footprint	Conservative basis with regard to space/footprint requirement for new build compressors. Opportunity to optimise and reduce with resulting impact on fence extension requirements, foundations etc.	CAPEX	Y	**New Build Options**				
CM	12	CM-12	New Technology Qualification	**Cause:** DLE technology is currently not proven for use on National Grid sites. **Effect:** Potential for extended qualification periods or concept recycle **Consequence:** Schedule impact.	Schedule	N	**DLE Retrofit Options**	**M**	**L**	**Minor**	Field trial planned in Q3 on XXXXXX unit. Two potential suppliers. Reasonable float in schedule to meet 2030 target for retrofit options - low impact.
CM	13	CM-13	New Technology Reliability	**Cause:** DLE is a new technology retrofit. Potential operability issues are currently unknown. Potential wider system dynamics issues. **Effect:** Operability issues/teething troubles are discovered during initial operational period leading to poor availability. **Consequence:** Availability impact.	Availability	N	**DLE Retrofit Options**	**H**	**M**	**Major**	Field trial planned in Q3 but limited learnings from this compared with use during operation. Two potential suppliers.
CM	14	CM-14	DLE Technology Cost	Cause: DLE Retrofit Options cost basis for Avon 1533 is currently for [redacted] technology and for the Avon 1535 option Siemens cost assumed. No other technologies have been considered. Effect: Potential to select [redacted] technology for Avon 1533 option with associated cost increase. [redacted] cost is also provisional. Consequence: CAPEX increase.	CAPEX	N	**DLE Retrofit Options**	**M**	**M**	**Significant**	
CM	15	CM-15	DLE Technology space constraints	Cause: DLE Retrofit Options for Avon 1535 [redacted] upgrade may prove difficult to install within existing Avon 1533 cabs. Effect: additional works involved to remove/relocate existing machinery train ancillary equipment to free up space, associated cost increase. Consequence: CAPEX increase.	CAPEX	N	**DLE Retrofit Options**	**L**	**M**	**Minor**	Siemens site survey to be undertaken at FEED to ensure space within cab is adequate. Current Cab temperature issues being resolved by ventilation modificaiton work 2022/23.
CM	16	CM-16	SCR Retrofit	**Cause:** SCR would need to be fitted to existing exhaust system. Current exhaust system has not been designed for SCR addition. **Effect:** Potential for increased complexity of retrofit. Potential for increased utilities requirements e.g. nitrogen and instrument air. **Consequence:** CAPEX increase.	CAPEX	N	**SCR Option**	**M**	**L**	**Minor**	SCR system design is vertical arrangement due to space constraints. [redacted] are reviewing the design for the SCR package
CM	17	CM-17	SCR Reliability	**Cause:** Lack of familiarity with SCR operation. **Effect:** Potential operational issues and teething troubles. **Consequence:** Reduced availability.	Availability	N	**SCR Option**	**L**	**L**	**Minor**	Relatively simple system. Systems in use by other operators.
CM	18	CM-18	SCR Technology Cost	**Cause:** Cost basis is currently for single vendor [redacted]). **Effect:** Potential to select alternative technology with associated impact on cost. **Consequence:** CAPEX increase.	CAPEX	N	**SCR Option**	**L**	**L**	**Minor**	[redacted] have updated the study by [redacted].
CM	19	CM-19	Electrical Load Requirements	**Cause:** No full electrical load assessment to date. **Effect:** Potential for dual compressor (GTs) to exceed maximum load provisions available on site. Requirement to increase electrical load capacity. Main risk is standby generator capacity and associated requirement to replace. Potential impact on UPS back up. **Consequence:** Increased CAPEX.	CAPEX	N	**New Build Options - 1 Unit**	**L**	**L**	**Minor**	400V system which may not be compatible with new machines, which are likely to be more reliant on electrical elements than older units. The aftercoolers are in the RIIO-T2 decommissioning plan so it is anticipated that there will be sufficient spare capacity in the electrical system to support new units.
CM	19	CM-19	Electrical Load Requirements	**Cause:** No full electrical load assessment to date. **Effect:** Potential for dual compressor (GTs) to exceed maximum load provisions available on site. Requirement to increase electrical load capacity. Main risk is standby generator capacity and associated requirement to replace. Potential impact on UPS back up. **Consequence:** Increased CAPEX.	CAPEX	N	**New Build Options - 2 Units**	**L**	**L**	**Minor**	400V system which may not be compatible with new machines, which are likely to be more reliant on electrical elements than older units. The aftercoolers are in the RIIO-T2 decommissioning plan so it is anticipated that there will be sufficient spare capacity in the electrical system to support new units.
CM	19	CM-19	Electrical Load Requirements	**Cause:** No full electrical load assessment to date. **Effect:** Potential for dual compressor (GTs) to exceed maximum load provisions available on site. Requirement to increase electrical load capacity. Main risk is standby generator capacity and associated requirement to replace. Potential impact on UPS back up. **Consequence:** Increased CAPEX.	CAPEX	N	**SCR Option**	**L**	**L**	**Minor**	400V system which may not be compatible with new machines, which are likely to be more reliant on electrical elements than older units. The aftercoolers are in the RIIO-T2 decommissioning plan so it is anticipated that there will be sufficient spare capacity in the electrical system to support new units.

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U	1a	U-1a	Capacity of Existing Instrument Air	**Cause:** Basis is to tie-in to existing package. No capacity assessments to date. **Effect:** Potential for additional instrument air package requirement. **Consequence:** CAPEX increase.	CAPEX	N	**New Build Options - 1 Unit**	**M**	**L**	**Minor**	Instrument air package was installed during SWEP project circa 2009 to feed entire plant including spare capacity (dual redundant air compressor package). Decommissioning of existing Avons will also free up additional capacity.
U	1b	U-1b	Capacity of Existing Instrument Air	**Cause:** Basis is to tie-in to existing package. No capacity assessments to date. **Effect:** Potential for additional instrument air package requirement. **Consequence:** CAPEX increase.	CAPEX	N	**New Build Options - 2 Units**	**H**	**L**	**Significant**	Instrument air package was installed during SWEP project circa 2009 to feed entire plant including spare capacity (dual redundant air compressor package). Decommissioning of existing Avons will also free up additional capacity.
S	1	S-1	Site Area Preparation	**Cause:** Conceptual phase engineering to date. No in-depth underground piping survey of redundant equipment. Uncertainty in the extent of underground piping requiring removal. Uncertainty in general level of site preparation required e.g. soil contamination, other buried obstructions etc. **Effect:** Potential for additional site remediation activities.	CAPEX	N	**New Build Options**	**M**	**L**	**Minor**	Buried pipework likely within fenceline that will need to be crossed for tie-ins. Ground conditions in greenfield area for new units not surveyed.
S	2a	S-2a	Space in Existing Cable Trenches	**Cause:** All options require routing of new cables via existing trenches, however, variation in volume of cabling required between options. Existing trench space currently unknown. Existing cable routes may be at capacity. Adequate segregation may not be possible. Unknown condition and space. **Effect:** Potential to expand trench space or remove redundant cables to make space. May need new trenches due to separation distance issues. **Consequence:** CAPEX increase.	CAPEX	N	**Retrofit Options**	**VL**	**M**	**Negligible**	New cable trenches will be installed for any greenfield location and removal of redundant aftercooler cables will free up additional space on existing trenches/ducting.
S	2b	S-2b	Space in Existing Cable Trenches	**Cause:** All options require routing of new cables via existing trenches, however, variation in volume of cabling required between options. Existing trench space currently unknown. Existing cable routes may be at capacity. Adequate segregation may not be possible. Unknown condition and space. **Effect:** Potential to expand trench space or remove redundant cables to make space. May need new trenches due to separation distance issues. **Consequence:** CAPEX increase.	CAPEX	N	**SCR Option**	**L**	**M**	**Minor**	New cable trenches will be installed for any greenfield location and removal of redundant aftercooler cables will free up additional space on existing trenches/ducting.
S	2c	S-2c	Space in Existing Cable Trenches	**Cause:** All options require routing of new cables via existing trenches, however, variation in volume of cabling required between options. Existing trench space currently unknown. Existing cable routes may be at capacity. Adequate segregation may not be possible. Unknown condition and space. **Effect:** Potential to expand trench space or remove redundant cables to make space. May need new trenches due to separation distance issues. **Consequence:** CAPEX increase.	CAPEX	N	**New Build Options**	**L**	**M**	**Minor**	New cable trenches will be installed for any greenfield location and removal of redundant aftercooler cables will free up additional space on existing trenches/ducting.
S	3	S-3	Access to Existing Trenches	**Cause:** Old trenches have cast iron and concrete coverings. **Effect:** May be difficult to remove and access trench for cable works. **Consequence:** CAPEX increase.	CAPEX	N	**All Options**	**M**	**VL**	**Negligible**	
S	4	S-4	Construction Near Feeder 23 pipeline	**Cause:** Live main feeder 23 pipeline is close to Redundant greenfield area for new units. Excavation methods are assumed. **Effect:** Potential for mechanically assisted excavations being limited. Increased manual excavation scope. **Consequence:** Schedule impact.	Schedule	N	**New Build Options**	**M**	**L**	**Minor**	
S	5	S-5	Extension of Drainage System	**Cause:** Current existing drainage system capacity and tie-ins unknown (local surface water drainage). **Effect:** Potential for scope increase. **Consequence:** CAPEX increase.	CAPEX	N	**New Build Options**	**M**	**VL**	**Negligible**	Brownfield area is not much bigger than existing drainage capacity. Conservative approach for greenfield new build.
S	6	S-6	Tie-in to Existing Vent Structure	**Cause:** New compressor vent stack to be tied into existing vent structure. Limited structural assessment to date. **Effect:** Additional support maybe required. **Consequence:** CAPEX increase.	CAPEX	N	**New Build Options**	**L**	**VL**	**Negligible**	Limited new pipework. Existing Avon pipework can be removed. Vent structures require some revamp work, but not expected to be significant impact.
S	7	S-7	Blowdown Capacity	**Cause:** New build unit integration impacts wider production system performance and blowdown scenarios. **Effect:** Potential for impact on main vent capacity and size of sterile area. Potential for vent system expansion requirement. N.B. Issues would be with main blowdown vent rather than route from individual compressors. **Consequence:** CAPEX increase.	CAPEX	N	**New Build Options**	**L**	**L**	**Minor**	Vent and wider system capacity is already sized for existing Avon units. Not expected to be a risk. Sterile area is likely to be sufficient for addition of new units. Not changing overall blowdown capacity from design.
S	8	S-8	Construction Disruption Due to Flooding	**Cause:** Areas of site prone to flooding. **Effect:** Potential for construction delay due to flooding. **Consequence:** Schedule delay.	Schedule	N	**New Build Options**	**L**	**L**	**Minor**	

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S	9	S-9	Subsidence	Potential on-site subsidence. Not due to construct in areas subject to subsidence. Not considered to be a project risk.							
S	10	S-10	Crossing Feeder 23 Pipeline - Construction Activities	**Cause:** Crossing of Feeder 23 is required by suction and discharge lines to new greenfield compressor(s). **Effect:** Risk of damage during construction to existing pipeline. **Consequence:** Production outage and CAPEX increase.	Production Outage	N	**New Build Options**	**VL**	**VH**	**Minor**	Feeder 23 is buried pipework therefore design will take in to account NG procedures (T/SP/SSW/22 & T/PM/SSW/2) when designing a crossing.
S	11	S-11	Process isolations	**Cause:** There is a risk that process isolation valves may pass or leak. **Effect:** Additional asset health works on passing valves. **Consequence:** Schedule and CAPEX increase.	CAPEX	N	**All Options**	**L**	**L**	**Minor**	Isolation points to be determined early in design process and site to confirm valve asset health status. Early works planned to address any works required.
S	12	S-12	SCR Layout	**Cause:** Addition of SCR equipment increases operational risk to unacceptable level. **Effect:** Potential that SCR option is not viable leading to new units being required. **Consequence:** CAPEX increase.	CAPEX	N	**SCR Option**	**L**	**VH**	**Significant**	Current layout not compliant with T/SP/G/37 due to proximity of compressor equipment to control building. QRA has been undertaken with recommended mitigations implemented to reduce residual risk to ALARP. Basis is that addition of SCR equipment will not impact QRA for current layout.
O	1	O-1	Construction SIMOPs	**Cause:** SIMOPs with ongoing operations during construction works. **Effect:** Construction disruption. **Consequence:** Schedule delay.	Schedule	N	**All Options**	**M**	**L**	**Minor**	
HSSE	1	HSSE-1	Ammonia On Site	**Cause:** SCR requires use of aqueous ammonia. **Effect:** On site storage of re-agents. Additional safety and waste management measures required. **Consequence:** Increased CAPEX & OPEX.	CAPEX	N	**SCR Option**	**L**	**VL**	**Negligible**	Will need bunded area and tank. 40 m3 allowed for under design. Sizing based on 1 tanker volume. Usage is very low. Current concentration is 24.5% aqueous ammonia.
HSSE	2	HSSE-2	Excessive Noise	**Cause:** New air blowers required (80kW) for SCR option, which are source of additional noise **Effect:** HSE and regulatory/permitting limitations on acceptable noise levels. Potential requirement to install additional noise mitigation measures. **Consequence:** CAPEX impact.	CAPEX	N	**SCR Option**	**L**	**VL**	**Negligible**	Equipment will be specified to within noise limitations. Low cost additional measures. Industrial area with overall noise levels. Recent noise complaints due to site operation.
HSSE	3	HSSE-3	Ammonia Release to Atmosphere	**Cause:** Full dispersion modelling and slippage of ammonia not currently quantified. Potential for higher ammonia releases to vent. **Effect:** Requirement for additional ammonia mitigation measures to remain within consent limits. **Consequence:** CAPEX increase for additional equipment.	CAPEX	N	**SCR Option**	**L**	**L**	**Minor**	
HSSE	4	HSSE-4	Air Pollution from GT Compressor	Part of deterministic results to compare against electric compressor. Not a project risk - fundamental selection driver.							
HSSE	5a	HSSE-5a	Failure to Meet Future Emissions Requirements	**Cause:** Future changes to pollution requirements or stricter requirements applied at permitting stage. Energy efficiency requirements may come in. **Effect:** Inability to achieve required regulatory limits with selected scheme, or requirement for additional modifications to meet limits. Cost increase for replacement machine or modifications. **Consequence:** CAPEX increase.	CAPEX	N	**New Build Options**	**VL**	**H**	**Minor**	All options meet current requirements. Have a lot more flexibility with new units to meet changes in requirements than for retrofit options. If changes are required, then all options would require a significant change. Electric machines would need additional electricity from green source. Regulations are not typically applied retrospectively.
HSSE	5b	HSSE-5b	Failure to Meet Future Emissions Requirements	**Cause:** Future changes to pollution requirements or stricter requirements applied at permitting stage. Energy efficiency requirements may come in. **Effect:** Inability to achieve required regulatory limits with selected scheme, or requirement for additional modifications to meet limits. Cost increase for replacement machine or modifications. **Consequence:** CAPEX increase.	CAPEX	N	**Retrofit Options**	**L**	**H**	**Significant**	All options meet current requirements. Have a lot more flexibility with new units to meet changes in requirements than for retrofit options. If changes are required, then all options would require a significant change. Electric machines would need additional electricity from green source. Regulations are not typically applied retrospectively.
HSSE	6	HSSE-6	Presence of NORMS	**Cause:** NORMs experienced in wider network. **Effect:** Potential for construction delay due to cleaning and decontamination requirements. **Consequence:** Schedule delay.	Schedule	N	**New Build Options**	**H**	**VL**	**Minor**	Standard procedures in place to manage this. Testing to be scheduled as part of construction planning process.
HSSE	7	HSSE-7	Pipework Isolation and Cleaning	**Cause:** Potential for contamination due to condensate, MEG etc. carryover from incoming sources. **Effect:** Potential for increased cleaning and decontamination of equipment and pipework. **Consequence:** Schedule delay.	Schedule	N	**New Build Options**	**M**	**VL**	**Negligible**	

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HSSE	8	HSSE-8	Asbestos Management	**Cause:** Potential for asbestos contamination in existing cabs and trenches. **Effect:** Potential for increased decontamination of equipment. **Consequence:** CAPEX increase.	CAPEX	N	**All Options**	**L**	**L**	**Minor**	Site Asbestos register only identifies asbestos in AGI building - Not currently within scope of work.
HSSE	9a	HSSE-9a	COVID/Pandemic Disruption	**Cause:** Potential for disruption to construction activities due to COVID or other pandemic/health issues in workforce. **Effect:** Potential for increased construction schedule. **Consequence:** Schedule increase.	Schedule	N	**Retrofit Options**	**VL**	**L**	**Negligible**	Larger workforce in place for new build option. Procedures in place to deal with COVID disruption.
HSSE	9b	HSSE-9b	COVID/Pandemic Disruption	**Cause:** Potential for disruption to construction activities due to COVID or other pandemic/health issues in workforce. **Effect:** Potential for increased construction schedule. **Consequence:** Schedule increase.	Schedule	N	**New Build Options**	**VL**	**M**	**Negligible**	Larger workforce in place for new build option. Procedures in place to deal with COVID disruption.
HSSE	10	HSSE-10	Environmental Permit refusal	**Cause:** Potenial that CSRP is not considered BAT by EA resulting in rejection of permit request. **Effect:** Requirement to install new units. **Consequence:** CAPEX increase.	CAPEX	N	**CSRP**	**L**	**VH**	**Significant**	Ongoing engagement with EA to understand their position.
CPO	1	CPO-1	Crossing Feeder 23 Pipeline - Permitting	**Cause:** Crossing of Feeder 23 Pipeline is required by suction and discharge lines to new compressor. Permitting required from operations. **Effect:** Risk of not obtaining permit due to loss of containment concerns etc. Risk of concept recycle. **Consequence:** Schedule delay.	Schedule	N	**New Build Options**	**VL**	**H**	**Minor**	Not currently assumed to be on critical path. May have to wait for extended period for production outage in feeder to be available. Been done for other projects.
CPO	2	CPO-2	Catalyst Sole Supplier	**Cause:** Single supplier for SCR catalyst. **Effect:** Tied into single supplier, with potential for increased costs, supply security issues or inability to source supplies. May need to alter unit to accommodate alternative supplier. **Consequence:** CAPEX increase & production outage.	CAPEX	N	**SCR Option**	**L**	**L**	**Minor**	Generic technology by catalysts may be proprietary in terms of design compatibility. Framework in ducting may not be compatible with alternative suppliers.
CPO	3	CPO-3	Rental of Land for Construction	**Cause:** Potential land rental required for construction phase for temporary construction infrastructure i.e. offices, car parking etc. to accommodate construction workforce. No cost allowance and no negotiations undertaken. **Effect:** Potential for cost escalation. Potential for schedule delay. **Consequence:** CAPEX & schedule increase.	CAPEX	N	**New Build Options**	**L**	**L**	**Minor**	Current estimate for land take assumes no additional land required.
CPO	4	CPO-4	Future changes in station design capacity	**Cause:** Potential for future increase to overall station flow capacity. **Effect:** Modifications required to accommodate capacity changes. **Consequence:** Future cost increase. General site risk. Not considered to be a project risk.							
CPO	5	CPO-5	Change to Hydrogen Network	Opportunity for future change to hydrogen production.	Revenue	Y	**All Options**				
CPO	6	CPO-6	Coordination with Other Projects	Potential to coordinate with other projects. Optimise workforce etc.	CAPEX	Y	**All Options**				
CPO	7a	CPO-7a	Coordination and Alignment with External Stakeholders	**Cause:** Coordination with external stakeholders required (Ofgem etc.). **Effect:** Potential delay with regard to gaining alignment on preferred option. **Consequence:** Schedule delay.	Schedule	N	**New Build Options**	**H**	**H**	**Critical**	XXXXXX
CPO	7b	CPO-7b	Coordination and Alignment with External Stakeholders	**Cause:** Coordination with external stakeholders required (Ofgem etc.). **Effect:** Potential delay with regard to gaining alignment on preferred option. **Consequence:** Schedule delay.	Schedule	N	**Retrofit Options**	**VL**	**M**	**Negligible**	XXXXXX
CPO	8a	CPO-8a	Coordination and Alignment with Internal Stakeholders	**Cause:** Coordination with internal stakeholders required. **Effect:** Potential delay with regard to gaining alignment on preferred option. **Consequence:** Schedule delay.	Schedule	N	**New Build Options**	**VL**	**M**	**Negligible**	Original cost estimates were based on 2019 business plan - risk of issue with internal stakeholders due to cost inflation.
CPO	8b	CPO-8b	Coordination and Alignment with Internal Stakeholders	**Cause:** Coordination with internal stakeholders required. **Effect:** Potential delay with regard to gaining alignment on preferred option. **Consequence:** Schedule delay.	Schedule	N	**Retrofit Options**	**H**	**H**	**Critical**	Original cost estimates were based on 2019 business plan - risk of issue with internal stakeholders due to cost inflation.
CPO	9	CPO-9	Network Outage Scheduling and Coordination	**Cause:** Planned network outage period is currently unknown. **Effect:** Allowed outage may be shorter than anticipated or at less optimum time for construction. **Consequence:** Schedule delay.	Schedule	N	**All Options**	**H**	**H**	**Critical**	Currently assuming that April - September period is available.

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CPO	10a	CPO-10a	Land Use / Extension / Planning Consent	**Cause:** New units require extension of existing site boundary. Permitting and consent requirement. Environmental and commercial negotiations. **Effect:** Potential for delays managing multiple stakeholders and gaining consent. **Consequence:** Schedule delay.	Schedule	N	**New Build Options - 1 Unit**	**M**	**H**	**Major**	Can't start construction until permitting is in place. Needs careful planning and management.
CPO	10b	CPO-10b	Land Use / Extension / Planning Consent	**Cause:** New units require extension of existing site boundary. Permitting and consent requirement. Environmental and commercial negotiations. **Effect:** Potential for delays managing multiple stakeholders and gaining consent. **Consequence:** Schedule delay.	Schedule	N	**New Build Options - 2 Units**	**M**	**H**	**Major**	Can't start construction until permitting is in place. Needs careful planning and management.
CPO	10c	CPO-10c	Planning Consent	**Cause:** SCR options result in significant increase in stack height due to the vertical SCR arrangement with notable visual impact. Permitting and consent requirement. Environmental and commercial negotiations. **Effect:** Potential for delays managing multiple stakeholders and gaining consent. **Consequence:** Schedule delay.	Schedule	N	**SCR Option**	**M**	**H**	**Major**	Can't start construction until permitting is in place. Needs careful planning and management.
CPO	11a	CPO-11a	Geopolitical Issues	**Cause:** Country specific and worldwide geopolitical issues affecting equipment supply and workforce. **Effect:** Potential for cost escalation. Potential for schedule delay. **Consequence:** CAPEX & schedule increase.	CAPEX	N	**Retrofit Options**	**H**	**M**	**Major**	Economic sensitivities to be conducted.
CPO	11b	CPO-11b	Geopolitical Issues	**Cause:** Country specific and worldwide geopolitical issues affecting equipment supply and workforce. **Effect:** Potential for cost escalation. Potential for schedule delay. **Consequence:** CAPEX & schedule increase.	CAPEX	N	**New Build Options**	**H**	**VH**	**Critical**	Economic sensitivities to be conducted.