

**Project Name: Harewood Whin Green Energy Park (GEP)**

REF:	Risk Title (event)	Risk Detail (cause)	Implications (consequence)	Risk Owner	Risk Actionee	Gross Score	Controls	Net Score	Open / Closed
GEP_R_01	Failure to secure a viable grid connection	1. Failure to identify and/or secure a cost-efficient/viable cable route to the point of connection. 2. Insufficient capacity in local distribution network. 3. Costs for distribution and/or transmission network reinforcement make project financially unviable. 4. Significant delays for distribution and/or transmission network reinforcement (note: up to 10-15yrs in some particularly constrained network areas). 5. Cumulative impact of other solar farms in close proximity to the Harewood Whin site if these other applicants secure grid connections before CYC.	1. Project cessation and/or delay (due to negotiation). 2. Extra legal costs and additional costs associated with alternative routing around third party land. 3. Increased costs, changes to the economic business case. 4. Potential costs sunk costs of G99 application (-E11k) if project is terminated ('sunk costs').	PM	PM	19	1. Conduct an early assessment of network capacity during feasibility stage. NPG's 'generation heat map' can be used to provide an initial indication of available capacity. 2. Request budget estimates from NPG during pre-feasibility to provide early indication of potential connection costs. 3. Progress with G99 application quickly to mitigate potential 'interactive queue' issues. 4. Conduct a cost analysis of the potential cable routes proposed by NPG in their connection offer. 5. Request support from grid connections expert to increase likelihood of a successful application and connection offer. 6. Involve CYC Legal Services in the wayleaves/easement negotiation process for cable routing, if required. 7. Quote from an Independent Connection Provider (ICP) for an alternative cost estimate for contestable works, to potentially save costs. 8. Undertake sensitivity analysis to evaluate the impacts of all potential pricing scenarios. 9. Consider altering the scope of the project and exploring a smaller-scale renewable energy development on-site with a lower export/import capacity from the distribution network, to overcome network constraints. 10. Consider altering the scope of the project and exploring an off-grid renewable energy development on-site with no export/import requirement from the distribution network, to overcome network constraints.	18	Open
GEP_R_02	Failure to obtain planning permission	1. Cumulative impact of other solar farms or developments in close proximity to the Harewood Whin site. 2. Objection from LPA Planning Officers, statutory consultees, local residents, or other stakeholders during planning consultation.	1. Project cessation. 2. Potential costs incurred for planning application, documentation, and surveys if project is terminated ('sunk costs'). 3. Additional costs to appeal the refused application and/or to revise project scope/design or resubmit planning application.	PM	PM	18	1. Pre-application discussions held at early stage with Local Planning Authority. 2. Pre-planning community engagement conducted to involve key stakeholders and local communities in early discussions around the proposed development. 3. Progress the planning application swiftly to mitigate potential issues of cumulative impact in the planning process. 4. Procure external Planning Consultant expertise to support with conducting necessary surveys and compiling necessary documentation to support the planning application.	13	Open
GEP_R_03	Project becomes unfeasible/unviable	1. Failure to secure and establish grid connection (GEP_R_01). 2. Failure to secure planning permission (GEP_R_02). 3. Challenges in obtaining wayleaves or easements over third party land (GEP_R_06). 4. Wholesale prices/price projections are lower than the modelled predictions. 5. Changes to economy cause inflationary cost increases for goods and services. 6. Wrong assumptions in the financial model.	1. Project cessation and/or delay (due to negotiation). 2. Extra legal costs and additional costs associated with alternative routing around third party land. 3. Increased costs, changes to the economic and financial cases of the business case. 4. Forecasted revenues may be lower than predicted, thus impacting affordability (i.e., extending payback period beyond the threshold agreed in the contract).	PM	PM	19	1. Undertake sensitivity analysis during the business case development to evaluate the impacts of changes in key variables such as potential pricing scenarios. 2. Conduct cost analysis of the potential cable routes proposed by NPG during the Connection Offer stage. 3. Involve Legal Services team in the wayleaves/easement negotiation process. 4. Seek quote from an Independent Connection Provider (ICP) for the contestable works section of the Connection Offer. 5. Consider alternative revenue streams that have the potential to reduce risk and increase revenues such as private wire and sleeved PPAs. 6. Consider implementing battery storage, and participating in national grid services to increase project viability. 7. Consider revising project scope to a more feasible/viable option - e.g. battery storage with national grid services to increase revenue; or conversion of project from 'in front of the meter' to 'behind the meter' solution if grid connection makes project unviable.	18	Open
GEP_R_04	Breach of planning condition	1. Failure to meet planning requirements. 2. Incompleteness. 3. Resources - insufficient/inadequate project or supply chain resources available to develop the project.	1. Project delays. 2. Additional costs.	Contractor	Contractor	8	1. Commission competent planning consultant. 2. Ensure that appropriate resources and financial provisions are committed to the discharge of conditions.	2	Open
GEP_R_05	Insufficient/inadequate resources available to develop the project	1. Labour market affected by withdrawal from the EU and restriction of EU citizens to work in the UK. 2. Insufficient/inadequate local supply chain contractor resources to deliver the project. 3. Limited supply of and/or inflated prices of key materials and components required for construction of the scheme.	1. Delays or unable to complete development programme. 2. Need to source resources from outside the local area with potential increased cost.	PM	PM	18	1. Engage with market/supply chain from an early point in the project prior to procurement to determine the availability of local expertise and capable contractors. 2. Continue monitoring the local, regional, and national economy and the implications of Brexit.	13	Open
GEP_R_06	Project negatively impacted by legal procedures	1. Contractor or subcontractor breach/cessation leads to termination of contract midway through the construction phase. 2. Grid connection traverses third party land, thus necessitating wayleaves/easements. 3. A change in regulations/legislation drives changes in the design or development of the project.	1. Additional costs and changes to the economic business case. 2. Project delays. 3. Demand on internal Legal Services colleagues.	PM	PM	13	1. Early identification of legal matters pertaining to leases, wayleaves, easements, access rights and ownership. 2. Involve Legal Services team in the cable route definition and the wayleave/easement negotiations, if required. 3. Continue to monitor and research prospective regulatory or legislative changes that may impact the viability of the project.	13	Open
GEP_R_07	Project affected by external events	1. International supply chain/market pressures. 2. Brexit. 3. Ukraine/Russia War.	1. Delays or unable to complete project development. 2. Additional costs and changes to the economic business case.	PM	PM	13	1. Continue to monitor external events and trends (particularly regarding local and national renewables supply chain/market).	13	Open
GEP_R_08	Resistance and/or objection to project proposals by local residents, businesses, and other key stakeholders	1. Objections raised during planning consultation process. 2. Poor community engagement throughout project including failure to involve community in pre-planning consultation. 3. Strong local resistance and opposition towards large-scale renewable energy development.	1. Impact on CYC reputation and relationship with local community and/or wider public. 2. Rejection of project proposals and potential delays or inability to progress the project.	PM	PM	19	1. Engage with local communities and key stakeholders early in project development (prior to planning application submission). 2. Relay key messages and deliver a series of community engagement events to seek feedback and opinions of local community. 3. Consider appointing community engagement support for the project. 4. Ensure local residents and key stakeholders are involved and frequently engaged throughout the project.	14	Open
GEP_R_09	Community disturbance and disruption during project construction	1. Noise/vibration, roadworks, dust, lighting etc.	1. Reputation and relationship with customers. 2. Complaints received.	PM/Contractor(s)	PM/Contractor(s)	9	1. Ensure effective environmental controls, policies, and procedures are in place on-site. 2. Commission Environmental Aspects & Impacts Assessment and develop and implement the Construction Environmental Management Plan prior to construction.	8	Open
GEP_R_10	Programme delays during the construction phase	1. Weather-related delays to construction (e.g. heavy rains, muddy conditions). 2. Poor coordination and management of resources by Construction Project Manager. 3. Unexpected labour challenges within EPC or other sub-contractors. 4. Reduced availability of key components (e.g. solar PV panels, hydrogen electrolyzers etc.) due to external factors.	1. Programme delays. 2. Cost overruns.	Contractor(s)	Contractor(s)	14	1. Minimise weather-related delays by programming for construction to take place during summer months (if possible).	13	Open
GEP_R_11	Injury, illness or death caused in the construction of the project	1. Insufficient safe systems of work in place on-site/insufficient risk management practices. 2. Unforeseen or unidentified hazards. 3. Insufficient and incompetent management/supervision resources.	1. Injuries and/or fatalities. 2. Workdays lost. 3. Project is cancelled. 4. Damage to reputation. 5. Legal cost and litigations.	Contractor(s)	Contractor(s)	13	1. Ensure effective H&S controls, policies and procedures are in place on-site. 2. Traffic Management Plans in place. 3. Effective communication about the procedures to be adopted.	13	Open
GEP_R_12	Trespassing of construction site, theft or vandalism of construction materials	1. Insufficient security and segregation of construction sites	1. Legal disputes. 2. Additional costs. 3. Injury or death.	Contractor(s)	Contractor(s)	6	1. Insurance to cover incidents of theft or vandalism of construction materials. 2. Implement appropriate security controls, including hardenings, signage, locks, security lighting, and remotely monitored CCTV.	6	Open
GEP_R_13	Quality of installation works fail to meet CYC's requirements	1. Substandard materials 2. Poor workmanship 3. Lack of pre-construction testing of materials and components (e.g. modules).	1. Programme delays. 2. Cost overruns. 3. Poor performance in operation. 4. Additional costs required to revamp and/or repower poorly functioning equipment during operation - an expense not considered in the financial model.	Contractor(s)	Contractor(s)	13	1. Implement proper and effective quality control procedures 2. Ensure pre-construction module testing is conducted and procure a robust module procurement quality management strategy. 3. Quality acceptance tests to be undertaken prior to handover of any works 4. Ensure Technical Consultant/Owner's Engineer is qualified and experienced at conducting quality inspections.	6	Open
GEP_R_14	Unavailability of electrical generation	1. Poor coordination and execution of commissioning	1. Revenue delays. 2. Additional costs. 3. Client disputes. 4. Damage to reputation.	Contractor(s)	Contractor(s)	12	1. Develop and implement a phased commissioning strategy to prove system prior to the energisation date. 2. Communication strategy to ensure that a proactive approach is taken to inform stakeholders of the delays, so as to avoid misinterpretation of causes.	6	Open
GEP_R_15	Operations negatively affected by external events	1. Potential changes in legislation/regulation/policy that directly or indirectly affects the project 2. Threat of a cyber-attack during operation; controls are hacked and control of the site is lost 3. Flooding and severe weather	1. Increased costs. 2. Loss of revenue. 3. Changes to the economic business case. 4. Reputational damage. 5. Project cessation.	O&M Contractor	O&M Contractor	12	1. Continual monitoring and research into prospective regulatory, legislative or policy changes that may impact the viability of the proposal. 2. Early identification of vulnerabilities; security tools and management to identify active security threats.	6	Open
GEP_R_16	During Operation, the system performance is significantly lower than that projected in the energy model/business case	1. A lack of local contractor resources to undertake maintenance and servicing of the equipment 2. Local contractor with poor performance or lack of experience in O&M 3. System failure, causing downtime of the system due to inadequate maintenance 4. Actual losses from the system and network are far higher than projected in the design.	1. Reduction in annual yield. 2. Failure to achieve generation guarantees and subsequent contract penalties. 3. Forecasted revenues are lower than predicted, thus extending payback, ROI, NPV, IRR beyond the thresholds agreed in the contract/business case.	O&M Contractor	O&M Contractor	13	1. Early engagement with local prospective supply-chain partners 2. Undertake research into long-term degradation of solar PV modules, battery storage, EV chargers etc. to confirm the accuracy of industry benchmarks. 3. Undertake appropriate quality assurance and peer review of the model and generation outputs. 4. Appropriate selection and management of competent and qualified installers.	6	Open

**Risk Scoring Matrix**

Impact	Catastrophic	17	22	23	24	25
	Major	12	18	19	20	21
	Moderate	6	13	14	15	16
	Minor	2	8	9	10	11
	Insignificant	1	3	4	5	7
		Remote	Unlikely	Possible	Probable	Highly Probable
		Likelihood				