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Kugaaruk Project Statement

Qulliq Energy Corporation (QEC) is a Government of Nunavut (GN) territorial corporation. Through the operation of 25 stand-alone diesel power plants, QEC is the sole provider of electricity to approximately 15,000 customer accounts in the territory.

Qulliq Energy Corporation is proposing to construct and operate a new power plant in the Hamlet of Kugaaruk located in the Kitikmeot Region of Nunavut. Kugaaruk is a community with increasing demand for electricity, reflecting both its growing population and a per-household rise in power usage. The existing power plant was built in 1974 and has exceeded its design life. As the facility has aged and become increasingly outdated, it has become increasingly difficult to maintain, and plant dependability will become an issue. Unreliable equipment puts the entire hamlet at risk of long power outages.

This proposed multi-year project will include a new four-engine power generation facility with installed capacity of approximately 2,400 kilowatts, designed for a life of over 40 years. It will incorporate new technology to improve reliability, efficiency, operation, as well as safety of operators. Environmental safety is also emphasized in terms of double-walled tanks, spill-containment berms, automatic sensors and alarms, and other features. Automatic fire suppression and other fire-safety features will also be included.

The new plant will also enable easier replacement of generating units, therefore facilitating future expansions and upgrades. The electrical layout of the plant will enable easy integration of future renewables such as wind and solar, along with battery storage. The power plant will be equipped with a freshwater tank and a sewage tank, for domestic usage.

Construction will include a fuel-storage system consisting of two double-walled 90-cubic-metre horizontal fuel tanks and fuel pumping facilities. QEC plans to construct a Quonset garage, transformer storage, pole racks, and oil and glycol drum storage and waste-disposal area with secondary containment berm.

Space will be allocated for transient staff accommodations, sea cans for storage, and a back-up emergency generator. Upgrades to the existing distribution system will also be required to connect to the new power plant. A fuel-transfer pipeline, about 30 metres in length, will be constructed to connect

to the Petroleum Products Division (PPD) bulk fuel facility adjacent to the site. The pipeline will also include features to guard against leakage.

The proposed new lot is roughly 6,000 square metres located immediately adjacent to the PPD bulk fuel facility. The area proposed for the power plant has been designated by the Hamlet for industrial land use.

The proposed lot was presented to and approved by the Hamlet of Kugaaruk. On March 11, 2021, a confirmation letter from the hamlet was received.

There are no designated wildlife areas, marine protected areas, territorial or national parks or Inuit owned lands in conflict with the power plant location. An archaeological impact assessment was carried out in July 2021, and no cultural-heritage sites were found in the vicinity of the site.

Employment-wise, on average, 22 workers are estimated to be required at the site for the duration of construction. This will fluctuate based on the construction phase. The contractor awarded the construction tender will determine the required labour force to meet project requirements. Contractors will be obligated to meet mandatory Inuit labour levels for all construction work.

QEC has staff in Kugaaruk who are responsible for the daily operation of the existing vintage power plant. This includes a full-time Plant Superintendent, and two part-time Assistant Operators. Existing staff will transition over to the new power plant once it has been constructed and commissioned. No new indeterminate staffing is anticipated to be required as a result of this project.

The majority of construction materials for the Project will be delivered by annual sealift. Some materials may be sourced locally or delivered via cargo plane, depending on size and quantity. The contractor will be responsible for sourcing construction equipment. This may include sub-contracting locally available equipment or bringing equipment to the community through the annual sealift.

This project is anticipated to provide an overall benefit to the Hamlet of Kugaaruk with more efficient use of diesel fuel, as well as the resulting reduction of greenhouse gas emissions. It will also enable QEC to improve power-generation infrastructure in the community, support continued community growth and achieve its mandate for the provision of safe, reliable electrical power to the communities that it serves.