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Qulliq Energy Corporation  
Société d'énergie Qulliq  
Qulliq Alruyaktuqtunik Ikumatjutiit

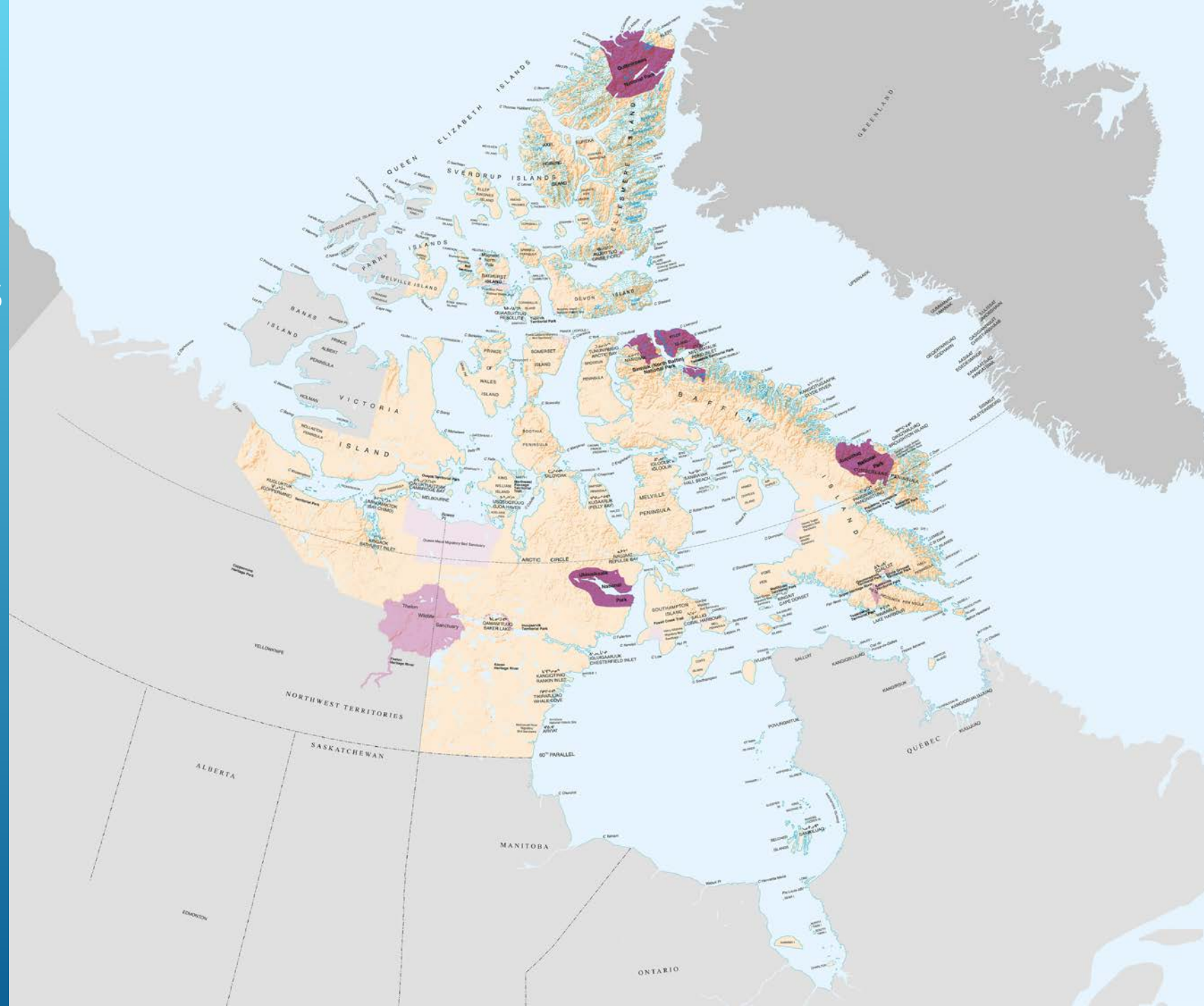
# INNOVATION – ENERGY IN NUNAVUT

Bruno Pereira, President & CEO

Qulliq Energy Corporation

# Nunavut


- SPREAD OVER NEARLY 2 MILLION SQUARE KILOMETERS
- POPULATION - 37,146
- 25 REMOTE COMMUNITIES, NO CONNECTION BY ROADS
- ONLY ACCESSIBLE BY AIR YEAR-ROUND AND SHIPPING SEASON IS LIMITED
- MIXED ECONOMY



# Qulliq Energy Corporation (QEC)

- QEC – CROWN CORPORATION 100 PER CENT OWNED BY THE GOVERNMENT OF NUNAVUT
- COMMITTED TO SUPPLYING SAFE, RELIABLE AND EFFICIENT ENERGY THROUGH RESPONSIVE AND RESPECTFUL INTERACTION WITH ALL STAKEHOLDERS
- QEC DELIVERS ELECTRICITY TO APPROXIMATELY 14,400 ELECTRICAL CUSTOMERS ACROSS NUNAVUT
- QEC IS THE ONLY ENERGY CORPORATION IN CANADA WITHOUT DEVELOPED LOCAL ENERGY RESOURCES OR REGIONAL ELECTRICITY TRANSMISSION CAPABILITY, CREATING A SITUATION OF HIGH DEPENDENCY ON FOSSIL FUEL

# Powering Nunavut

- NO "BACK-UP" GRID
  - 100% RELIANT ON IMPORTED FUEL
  - PRIMARY POWER - DIESEL GENERATION
  - 25 "STAND-ALONE" POWER PLANTS IN 25 COMMUNITIES
  - 95 GENSETS – 34.38 MW TOTAL PEAK DEMAND
  - 2015-16 TOTAL GENERATION 187,046,915 KWH
  - RELIABILITY 99.78%
  - FUEL EFFICIENCY 3.73KW/LITER
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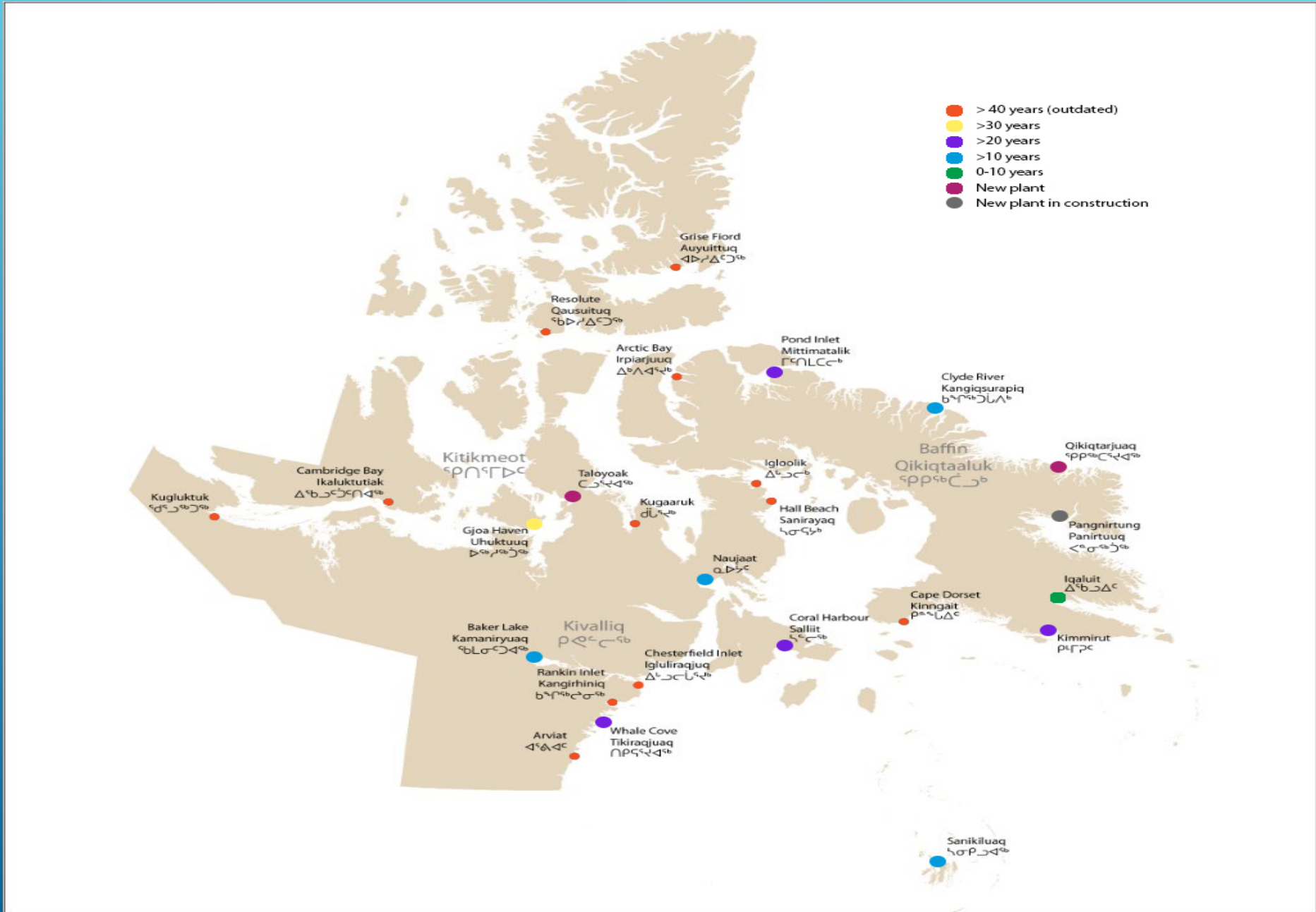
# Age of QEC Power Plants

Plant Name	Constructed
Grise Fjord	1963
Cape Dorset	1964
Cambridge Bay	1967
Kugluktuk	1968
Arviat	1971
Resolute Bay	1971
Rankin Inlet	1973
Arctic Bay	1974
Hall Beach	1974
Igloolik	1974
Kugaaruk	1974
Chesterfield Inlet	1975
Gjoa Haven	1977

Plant Name	Constructed
Coral Harbour	1988
Whale Cove	1991
Kimmirut	1992
Pond Inlet	1992
Clyde River	1999
Naujaat	2000
Sanikiluaq	2001
Baker Lake	2003
Iqaluit	2014
Qikiqtarjuaq	2016
Taloyoak	2016
Pangnirtung*	2017

➤ Plant "Superstructure" Design Life = 40 years

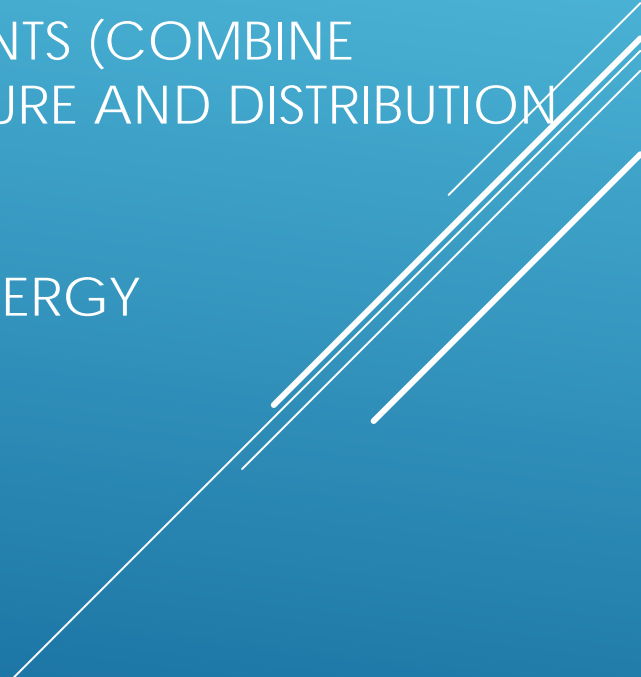




# Protecting the Environment

- KEY STRATEGIC PRIORITY FOR QEC – PROTECTING THE ENVIRONMENT
- APPROXIMATELY 55 MILLION LITERS FOSSIL FUEL CONSUMED ANNUALLY
- CANADA GHG EMISSIONS = 732.6 MEGATONNES (2014 DATA)
- NUNAVUT = .0431 % OF CANADA'S OVERALL GHG EMISSIONS (2014 DATA)
- NUNAVUT = 700 KILOTONNES; QEC = 135 KILOTONNES CO<sub>2</sub> ANNUALLY = 19% OF NUNAVUT OVERALL
- NUNAVUT = UNIQUE AND NOT COMPARABLE TO MOST INDUSTRIALIZED PROVINCES IN TERMS OF CO<sub>2</sub> EMISSIONS

# Reducing Co2 Emissions

- CONTINUAL FOCUS ON ENHANCING THE "EFFICIENCY" OF QEC PLANTS
    - \* IMPROVED EFFICIENCY OF REPLACEMENT GENERATOR SETS
    - \* IMPROVED EFFICIENCY THROUGH "COGENERATION" PLANTS (COMBINE PRODUCTION OF ELECTRICITY AND HEAT THROUGH CAPTURE AND DISTRIBUTION OF "WASTE" HEAT (DISTRICT HEATING SYSTEMS))
    - \* COGENERATION PLANTS CAN MORE THAN DOUBLE THE ENERGY EFFICIENCY OF A REGULAR POWER PLANT
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# Reducing Co2 - Alternative Energy Initiatives

- LED STREET LIGHTING IN IQALUIT
- INSTALLATION AND INTEGRATION OF TEST SOLAR ARRAY WITH IQALUIT'S ELECTRICAL GRID SYSTEM
- INDOOR LED LIGHTING (SMART CAST TECHNOLOGY) DEMONSTRATION PROJECT IN IQALUIT CORPORATE OFFICE
- DISTRICT HEATING SYSTEM UPGRADES IN IQALUIT AND ARVIAT
- WIND RESOURCE ASSESSMENT FOR ALL 25 COMMUNITIES
- HYDRO ELECTRIC POTENTIAL – STUDIES COMPLETED, CURRENTLY ON HOLD

# Going Forward – QEC Priorities going forward

- ✓ DIESEL POWER GENERATION = BACKBONE > ENHANCE EFFICIENCIES
  - ✓ RENEWABLE/ALTERNATIVE ENERGY > EXPLORE COMPLEMENTARY TECHNOLOGIES
  - ✓ CAPITAL > EXPLORE PARTNERSHIP/INVESTMENT OPPORTUNITIES
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