

# CURRICULUM ALIGNMENT – How Green is Canada’s Electricity?

## Northwest Territories

Grade	Course Name and Number	Unit	Outcome
9	Grade 9 Science	Unit D: Electrical Principles and Technologies (Science and Technology Emphasis)	<b>General Outcome 4:</b> Describe and discuss the societal and environmental implications of the use of electrical energy.
9	Grade 9 Science	Unit D: Electrical Principles and Technologies (Science and Technology Emphasis)	<b>Specific Outcome 4.1:</b> Identify and evaluate alternative sources of electrical energy, including oil, gas, coal, biomass, wind, waves and batteries.
9	Grade 9 Science	Unit D: Electrical Principles and Technologies (Science and Technology Emphasis)	<b>Specific Outcome 4.2:</b> Describe the by-products of electrical generation and their impacts on the environment.
9	Grade 9 Science	Unit D: Electrical Principles and Technologies (Science and Technology Emphasis)	<b>Skill Outcome (Analyzing and Interpreting):</b> Analyze qualitative and quantitative data and develop and assess possible explanations.
9	Grade 9 Science	Unit D: Electrical Principles and Technologies (Science and Technology Emphasis)	<b>Attitude Outcome (Stewardship):</b> Demonstrate sensitivity and responsibility in pursuing a balance between the needs of humans and a sustainable environment.
10	Science 10	Unit D: Energy Flow in Global Systems (Social and Environmental Contexts Emphasis)	<b>Specific Outcome 4.6:</b> Assess, from a variety of perspectives, the risks and benefits of human activity, and its impact on the biosphere and the climate.
10	Science 10	Unit D: Energy Flow in Global Systems (Social and Environmental Contexts Emphasis)	<b>Skill Outcome (Performing and Recording):</b> Use library and electronic research tools to collect information on a given topic.
10	Science 10	Unit D: Energy Flow in Global Systems (Social and Environmental Contexts Emphasis)	<b>Skill Outcome (Performing and Recording):</b> Select and integrate information from various print and electronic sources or from several parts of the same source.
10	Science 10	Unit D: Energy Flow in Global Systems (Social and Environmental Contexts Emphasis)	<b>Skill Outcome (Analyzing and Interpreting):</b> Compile and display, by hand or computer, evidence and information in a variety of formats, including diagrams, flow charts, tables, graphs and scatterplots.

10	Science 10	Unit D: Energy Flow in Global Systems (Social and Environmental Contexts Emphasis)	<b>Skill Outcome (Analyzing and Interpreting):</b> Propose alternative solutions to a given practical problem, identify the potential strengths and weaknesses of each, and select one as the basis for a plan.
10	Science 10	Unit D: Energy Flow in Global Systems (Social and Environmental Contexts Emphasis)	<b>Skill Outcome (Analyzing and Interpreting):</b> Propose alternative solutions to a given practical problem, identify the potential strengths and weaknesses of each, and select one as the basis for a plan.
10	Science 10	Unit D: Energy Flow in Global Systems (Social and Environmental Contexts Emphasis)	<b>Skill Outcome (Communication and Teamwork):</b> Work as members of a team in addressing problems and apply the skills and conventions of science in communicating information and ideas and in assessing results.
10	Science 10	Unit D: Energy Flow in Global Systems (Social and Environmental Contexts Emphasis)	<b>Skill Outcome (Communication and Teamwork):</b> Synthesize information from multiple sources or from complex and lengthy texts and make inferences based on this information.
10	Science 10	Unit D: Energy Flow in Global Systems (Social and Environmental Contexts Emphasis)	<b>Skill Outcome (Communication and Teamwork):</b> Identify multiple perspectives that influence a science-related decision or issue.
10	Science 10	Unit D: Energy Flow in Global Systems (Social and Environmental Contexts Emphasis)	<b>Skill Outcome (Communication and Teamwork):</b> Develop, present and defend a position or course of action, based on findings.
10	Course PRS1020	Non-renewable Resources	<b>Outcome 2:</b> Identify and describe impacts resulting from the use of non-renewable resources.
10	Course PRS1020	Non-renewable Resources	<b>Specific Outcome 2.1:</b> Describe environmental impacts that result from the use of non-renewable resources; e.g. greenhouse gases, acid deposition, resource depletion, ozone depletion, smog, ecosystem destruction, water pollution.
10	Course PRS1020	Non-renewable Resources	<b>Specific Outcome 2.3:</b> Define sustainable energy development and research future impacts on resource supply and demand, and options for ensuring future sustainable development; e.g. social, economic, geological, technological and environmental.
10	Course ENS1010	Introduction to Stewardship	<b>Outcome 2:</b> Describe ways in which human intervention has affected the environment.
10	Course ENS1040	Living with the Environment	<b>Outcome 1:</b> Investigate and describe relationships between humans and their environments.

10	Course ENS1040	Living with the Environment	<b>Outcome 1.4:</b> Identify examples of human impacts on natural and built environments and the reasons for them based on human wants and needs.
11	Science 20	Unit A: Chemical Changes Themes: Matter, Change and Energy	<b>Specific Outcome 20–A3.2sts:</b> Discuss the appropriateness, risks and benefits of technologies, assessing each potential application from a variety of perspectives, including sustainability.
11	Course ENS2040	Environmental Health & Safety	<b>Outcome 1:</b> Identify environmental health and safety issues relevant to one of Alberta’s industries.
11	Course ENS2130	Renewable & Non-renewable Energy Resources	<b>Outcome 1:</b> Describe current and potential sources of energy.
11	Course ENS2130	Renewable & Non-renewable Energy Resources	<p><b>Outcome 2:</b> Analyze the potential environmental and economic impacts of a variety of current and future renewable and non-renewable energy sources (e.g. conventional oil, oil sands, hydrogen, direct solar, hydro, nuclear, wind, geothermal, biomass, waste, biofuels), considering but not limited to:</p> <ul style="list-style-type: none"> <li>• net energy and/or energy returned on energy invested (EROEI)</li> <li>• availability of source</li> <li>• cost to develop, phase in and use</li> <li>• governmental incentives</li> <li>• national and global economic and political security</li> <li>• facilities and equipment essential to energy production</li> <li>• basic steps, including safety measures, involved in energy production</li> <li>• effects of extraction, transportation and use on the environment</li> </ul>
12	Science 30	Unit D: Energy and the Environment	<b>General Outcome 1:</b> Students will explain the need for balancing the growth in global energy demands with maintaining a viable biosphere.
12	Science 30	Unit D: Energy and the Environment	<b>Specific Outcome 30–D1.5k:</b> Describe the environmental impact of developing and using various energy sources; e.g. conventional oil, oil sands, solar power, wind power, biomass, hydroelectricity, coal burning power, nuclear power, geothermal.
12	Science 30	Unit D: Energy and the Environment	<b>Specific Outcome 30–D2.1sts:</b> Explain that decisions regarding the application of scientific and technological development involve a variety of perspectives, including social, cultural, environmental, ethical and economic considerations (evaluate the environmental and economic implications of energy transformation technologies).
12	Course	Energy & the Environment	<b>Outcome 1:</b> Describe the social, economic and environmental significance of energy

	ENS3040		development.
12	Course ENS3040	Energy & the Environment	<b>Specific Outcome 1.1:</b> Describe the social, economic and environmental significance of an energy development; e.g. a hydro dam (Brazeau and Bighorn dams), windfarms (Pincher Creek), coal or gas fired power plant (Keephills).
12	Course ENS3040	Energy & the Environment	<b>Specific Outcome 1.2:</b> Analyze the relationship between an energy development and the environment; e.g. greenhouse gases, acid deposition, ecosystem destruction, resource depletion, ozone depletion, smog, water pollution.
12	Course ENS3130	Sustainable Energy	<b>Outcome 2:</b> Identify issues involving current and future energy supply and demand.