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Chromium in the Environment and its Toxicity

by Alanna Wade, Environment Officer Intern

Chromium

24
Cr
51.996

What is Chromium?

Chromium is a grey metal that is hard, brittle, and resistant to corrosion. Chromium has a very high melting point at 1937°C (3514.6°F). It can be added to iron to form a very strong surface. It is primarily found in chromite ore.



Where is Chromium Naturally Found?

High amounts of Chromium are found in rocks.



Small amounts of Chromium are found in soil, rocks, and sediments in water bodies.



What is Chromite Ore?

Chromite ore is a rock that contains a mixture of chromium, iron, and oxygen.



Chromium and Mining

Chromium ore is mined from the ground. Chromium ore is found in surface water and can be found in the earth's crust. Chromium can also be found in waste rock, mine tailings, and slag piles, which can result in soil and water contamination.



Chromium is found in surface water and soil because of its high oxygen.



Chromium is found in surface water and soil because of its high oxygen.

Uses of Chromium

Chromium is used in a variety of applications, including leather tanning, chrome plating, and steel production.



Chromium in the Ring of Fire Be Toxic?

The Ring of Fire is a region of the world where there is a high concentration of volcanoes and earthquakes. Chromium is found in the Ring of Fire, and it can be toxic to humans and the environment.

Forms of Chromium

There are many forms of Chromium, but the three forms of Chromium of particular concern are Chromium (Chromium-0), Chromium-3, and Chromium-6. Chromium-0 is the most common form of Chromium, and it is found in the environment. Chromium-3 is found in the environment, and it is found in the environment. Chromium-6 is found in the environment, and it is found in the environment.

Cr ⁰ (Chromium-0)	Cr ³⁺ (Chromium-3)	Cr ⁶⁺ (Chromium-6)
24	21	18

Chromium Toxicity

Chromium toxicity depends on its form. Chromium-6 is the most toxic form of Chromium, and it is found in the environment. Chromium-6 is found in the environment, and it is found in the environment. Chromium-6 is found in the environment, and it is found in the environment.



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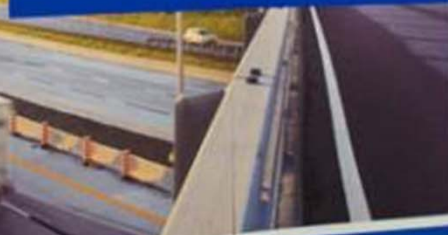





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Community Energy Planning (CEP) for the Shibogama First Nations Council Communities



Let's Get Started!

Shibogama Technical Services (STS) and Kuuksuk Lake, Kingfisher Lake, Wapikawik, Wapikawik and Wapikawik Lake First Nations were awarded funding from the Independent Electricity System Operator (IESO) Aboriginal Community Energy Plan (ACEP) program to undertake community energy planning.

Together, with the assistance of the Pembina Institute, we are working through the planning process to develop community specific Energy Plans that reflect each community's needs, needs and opportunities for:

- Energy Efficiency
- Energy Efficiency Reducing Electrical Consumption
- Energy Efficiency Renewable and Clean Energy Technologies



Power Generating Station, Kuuksuk Lake First Nations

CEP/ACEP Aims to:

1. Identify the community's energy needs and opportunities for energy efficiency, renewable and clean energy technologies.

2. Develop a community specific Energy Plan that reflects the community's needs, needs and opportunities for energy efficiency, renewable and clean energy technologies.

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14. Develop a community specific Energy Plan that reflects the community's needs, needs and opportunities for energy efficiency, renewable and clean energy technologies.

15. Develop a community specific Energy Plan that reflects the community's needs, needs and opportunities for energy efficiency, renewable and clean energy technologies.

Key Steps to CEP

1. Project Introduction

2. Vision & Objectives

3. Community Energy Baseline Update

4. Energy Planning

5. Finalizing the Energy Plan

6. Project Closeout

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30. Project Closeout

Value to our Communities

One of the main goals of the CEP/ACEP program is to help communities develop a community specific Energy Plan that reflects the community's needs, needs and opportunities for energy efficiency, renewable and clean energy technologies.

Another benefit is having a Community Energy Plan that reflects the community's needs, needs and opportunities for energy efficiency, renewable and clean energy technologies.

A third benefit is having a Community Energy Plan that reflects the community's needs, needs and opportunities for energy efficiency, renewable and clean energy technologies.

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A twenty-first benefit is having a Community Energy Plan that reflects the community's needs, needs and opportunities for energy efficiency, renewable and clean energy technologies.

A twenty-second benefit is having a Community Energy Plan that reflects the community's needs, needs and opportunities for energy efficiency, renewable and clean energy technologies.

A twenty-third benefit is having a Community Energy Plan that reflects the community's needs, needs and opportunities for energy efficiency, renewable and clean energy technologies.

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A twenty-fifth benefit is having a Community Energy Plan that reflects the community's needs, needs and opportunities for energy efficiency, renewable and clean energy technologies.

Community Involvement

Community involvement will lead the energy planning process. At the beginning of the planning process, we will be developing a community specific Energy Plan. This plan will outline how best to work with each First Nation to gather information and input during the planning process. Ways we will look to gather input from our partners include:

- Community Meetings
- Public Open House
- Surveys
- One-on-One Interviews
- Social Media





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Sampling and Monitoring Events

Often in this process when phases are delayed for several years, AANDC requires additional sampling and monitoring events.

- to confirm data and assist consultants in determining next steps and costing models for design and or remediation.


Many projects have been known to have more than 5 year delays between assessment and design and design and remediation.

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Building a First Nation Forest Industry in Northwestern Ontario

*Bert Hennessey, R.P.F.
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