



Where in the World Does my Smartphone Come From?

The Canadian Contribution to
Non-Renewable Resources in
Smartphones

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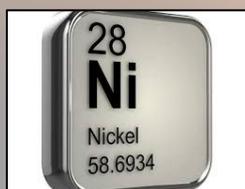


What Materials Make a Smartphone and Where Do They Come From?

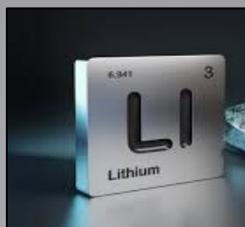
Smartphones are truly remarkable devices that have so many purposes. They provide us with entertainment, work, and the ability to communicate with others. Over 84% (6.6 billion people) of the world's population has smartphones. However, the real question is, **what** materials go into making all these smartphones? There are at least 35 different materials required to make these miraculous devices, plenty of them being non-renewable resources - and many of them have a **Canadian connection!**

Some of the important non-renewable resources used in making smartphones are:

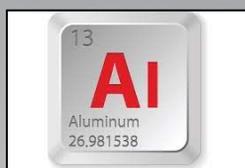
1. Nickel



2. Lithium



3. Aluminum



4. Tantalum



Nickel

Nickel is a metal alloy that is a combination of copper (75%) and nickel (25%). It is found in small proportions at a time in the Earth's crust. It was first discovered in Stockholm, Sweden. Nickel is a common resource used around the world, but more than 50% of the world's nickel supply is contained in Canada, Russia, Indonesia, and South Africa. As you know, the coin in Canada that is worth 5 cents is made out of nickel. However, nickel is also used for making wires, engine parts, and many other important objects. In a phone, nickel's main purpose is for the microphone diaphragm, which vibrates when responding to sound waves. Like the other resources I have mentioned, nickel is **non-renewable**.

Canadian Connection: The Creighton Mine, in Sudbury, Ontario, first started in 1901. Since the mine opened, it has produced around 155 million tonnes of ore, to make nickel.



Lithium

Lithium is a **non-renewable** resource that is most commonly produced in Chile and was also first produced in Stockholm, Sweden. It is a highly flammable substance that comes from lithium minerals, which are found throughout igneous rocks. It can also be found among brine pools, in lithium chloride salts. Lithium is often used for industrial uses, such as the battery market. Since batteries are very important in smartphones, lithium is essential in the making of them.

Canadian Connection: At the moment, lithium is not produced in Canada. However, Canada has over 2.5% of the world's lithium deposit. Therefore, Canada could possibly be a major lithium producer in the future.



Aluminum

Aluminum is a **non-renewable** resource. It is used in many different products, such as foil, cans, kitchen utensils, and many more. It is one of the most important materials in any kind of smartphone. However, aluminum is not a pure substance on its own. It consists of many other non-renewable resources.

Aluminum is mostly made up of bauxite ore, which consists of a combination of hydrated aluminum oxide, silica, and iron oxide.

Aluminum was first produced by two scientists, one in Ohio and the other in Northwestern France at the time. Many places in the world produce aluminum, but it is most commonly produced in Canada, South Asia, Australia, and Western Europe.

Canadian Connection: There are nine major aluminum smelters in Canada, and each of them are located in Quebec. There is also one major aluminum smelter in British Columbia. All 10 of these aluminum smelters produce great amounts of aluminum each year.



Tantalum

Tantalum is a non-renewable substance that is rarely found raw in nature. It is often found in columbite tantalite ore, and is a bluish-gray, hard substance when extracted. Tantalum was first founded in Ytterby, Sweden, by Anders Ekeberg, who was an accomplished chemist and mathematician. Nowadays, tantalum is essential for many different kinds of electronic devices, including smartphones.

Canadian Connection: Presently, Canada does produce a small amount of tantalum, but recently, some companies are putting effort into becoming a significant source of tantalum production.



What is the Canadian Contribution to Smartphone Production?

Canada is currently a major producer of some of the non-renewable resources needed to make smartphones. For other non-renewable resources that Canada does not currently produce, plans are under way to increase production of these resources in the future. This all points to a promising future for Canada's increasing contribution to smartphone production globally.



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Introduction

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Conclusion

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