

# ACTIVITY 6: MINING FOR ENERGY



Your home is “on the grid” – connected to electrical power from Yukon’s Hydro Dams. You are interested in supplementary energy using one of two renewable energy options made from mining materials. Choose from one of the two power options and fill in the blanks with the element name and symbol, use spare paper if you need more room.

## WHAT DO I NEED?

The Periodic Table and Online Research

More than **220 tonnes** of coal is required to build a wind turbine

BATTERY ENERGY STORAGE

3	28	25
27	6	23

STEEL USED TO BUILD TURBINES

26	6
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BLADES

13
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CONTROLS

29	14
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MAGNET GENERATION

26	60
5	66

CORROSION PROTECTION

42
30

## WHEN WE EXPLORE FOR MINERALS AND METALS WE ARE FINDING RENEWABLE SOURCES OF ENERGY TOO:

In northern Quebec, Glencore’s Raglan Mine is replacing diesel fuel with wind power. The wind turbine and energy storage facility – the first in Canada – has helped reduce the mine’s greenhouse gas emissions and has the potential to transform the Arctic’s energy landscape.

Developed by: Yukon Women in Mining

Resource Credit: Mining Association of Canada

### QUESTION 1:

What year was the periodic table first developed and by who?

### QUESTION 2:

Name a Yukon company mining company that is exploring for copper?

HINT: The company name is on Activity 7 Resource Tool

### QUESTION 3:

What metals are required for battery energy storage for wind farms?

*(Circle the correct answer)*

- A) Copper, Silicon, Cobalt, Boron
- B) Molybdenum, Zinc, Iron, Aluminum
- C) Carbon, Zinc, Dysprosium, Iron
- D) Nickel, Lithium, Magnesium, Cobalt

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Yukon

SOLAR PANELS

48	52	42
4	32	31
49	47	14

## CHOICE 2: SOLAR PANELS

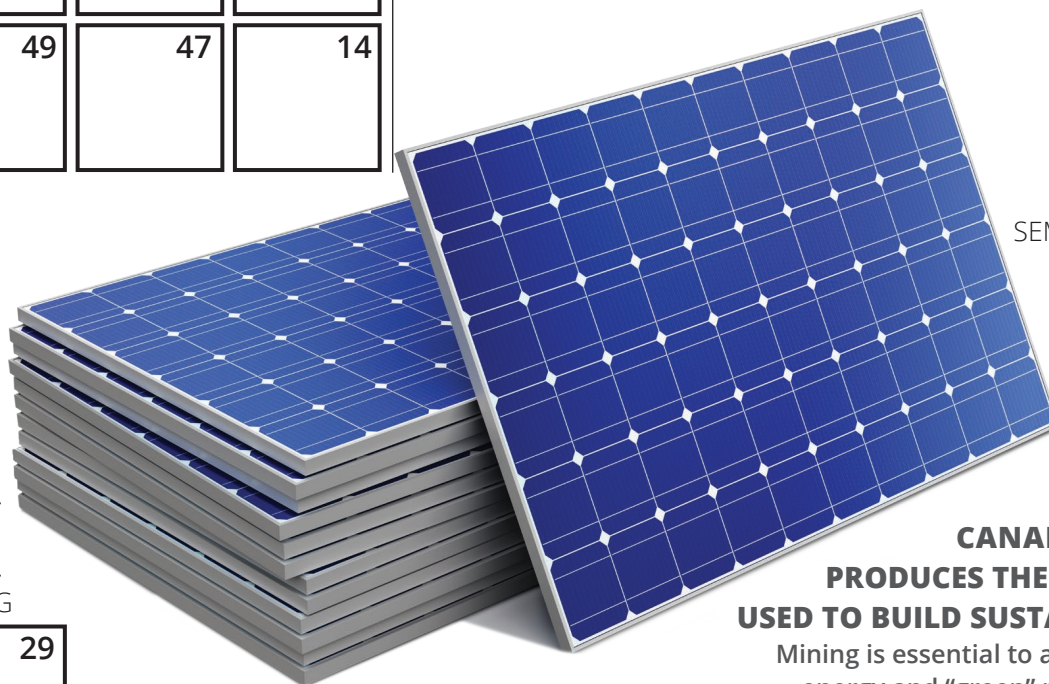
14 of the 19 minerals and metals used in solar Photovoltaics (PV) panels come from **Canadian mines**

FRAME

13	22
30	12

SEMI-CONDUCTOR

5
15



WIRING

29
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### CANADA'S MINING INDUSTRY PRODUCES THE MINERALS AND METALS USED TO BUILD SUSTAINABLE TECHNOLOGIES

Mining is essential to a low-carbon future with clean energy and "green" products requiring metals and minerals as building blocks.

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#### QUESTION 4:

Which side (left or right) of the periodic table are the metals?

- A) Left                      B) Right

#### QUESTION 5:

Can you name a solar company in Yukon?

#### QUESTION 6:

How many of the 19 minerals and metals used in solar PV panels come from Canadian mines?

(Circle the correct answer)

- A) 11                      B) 16  
C) 14                      D) 19

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