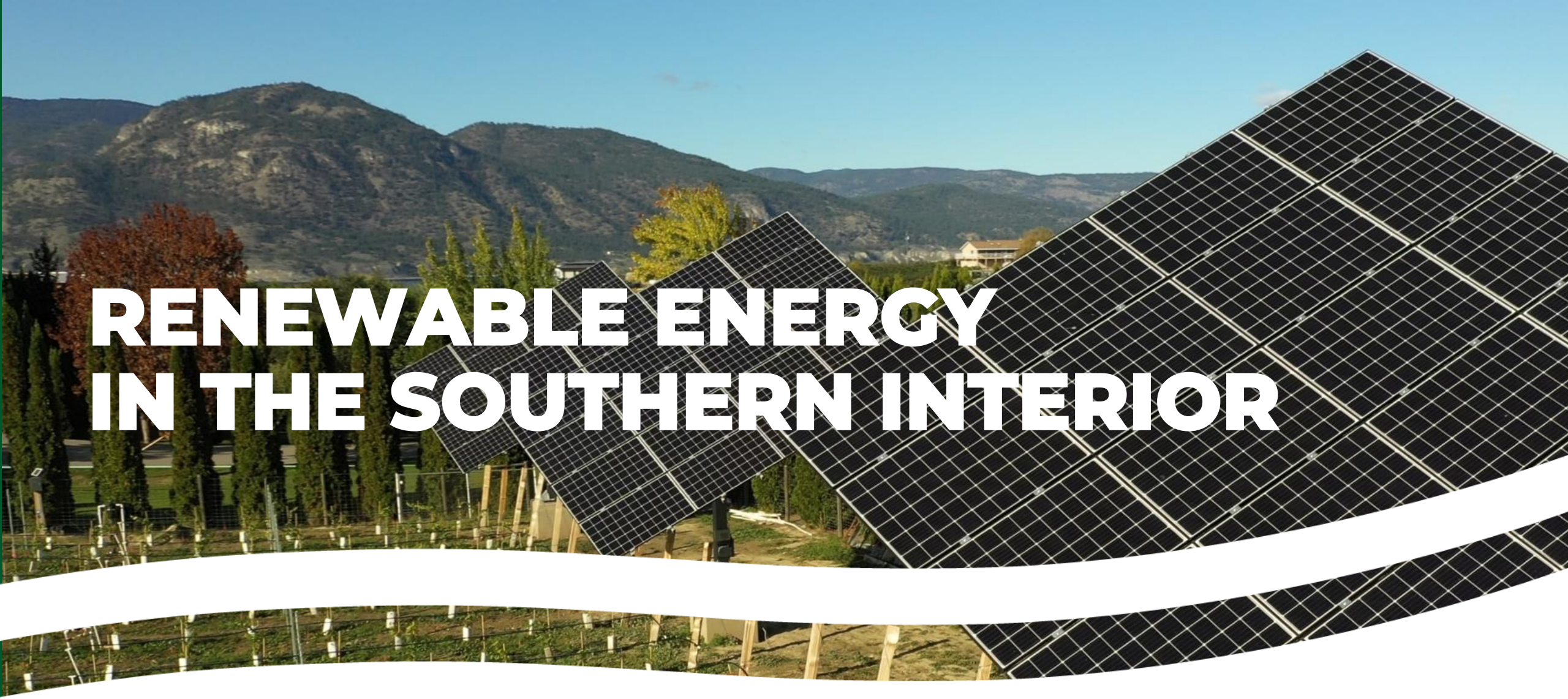


RENEWABLE ENERGY IN THE SOUTHERN INTERIOR

Relay

Canadian Renewable Energy Association
WIND. SOLAR. STORAGE.

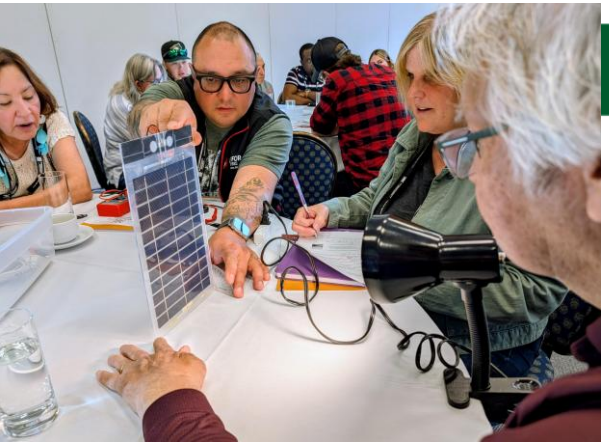
Community Energy Association

WELCOME!

Objectives:

Increase awareness of renewable energy, local projects, and regional expertise.

Foster a supportive renewable energy community in the region to explore potential collabs, remove barriers, and pursue opportunities.



Facilitators

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Patricia is the Director of Policy for British Columbia at the Canadian Renewable Energy Association, Canada's national organization for wind, solar and storage

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Ryan Gander, Relay Education

Ryan works as a facilitator for Relay Education, a Canadian charity delivering hands-on education and training about renewable energy, energy efficiency, climate change and green careers in school classrooms.

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Rob van Adrichem, Community Energy Association

Rob is CEA's director of external relations and facilitator for the Northern BC Climate Action Network (NorthCAN), a unique platform to share information about northern initiatives and build connections between northerners who identify, influence, and implement local projects that reduce emissions and boost local economies.

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TODAY

Overview of the day:

- Round-the-room introductions
- Electricity in BC and BC Hydro's Calls for Power
- Renewable Energy 101

Break

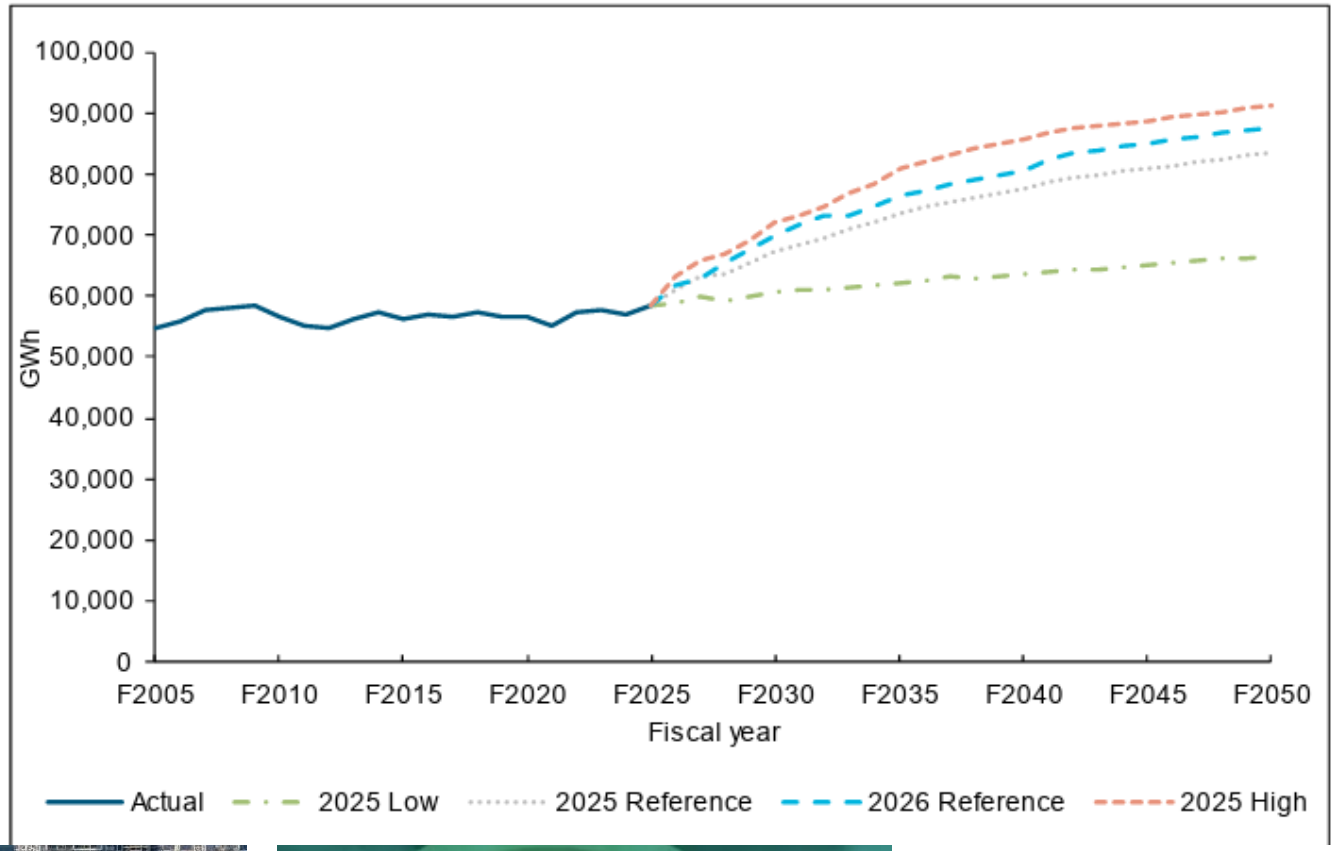
- Info-sharing about regional projects
- Discussion about benefits, priorities, communication
- Wrap-up and next steps

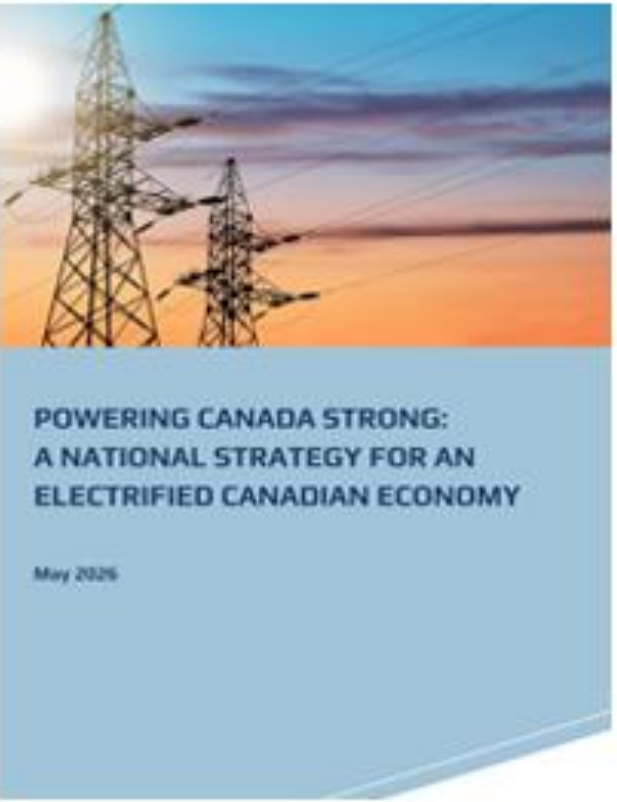
AROUND THE ROOM

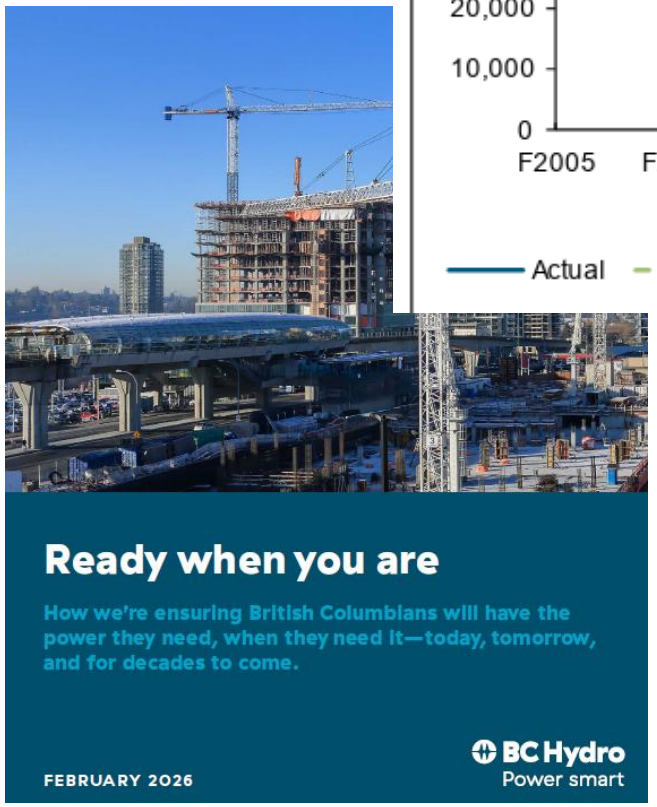
1. Who are you?
2. What do you do?
3. What's your interest in renewable energy and why did you choose to be here?

ELECTRICITY DEMAND IS GROWING

Figure 1 – Total Integrated System Energy Before DSM







To help meet growing demand for electricity, BC Hydro signed contracts with 13 wind and 1 solar project following a competitive procurement process.

Enough to power 850,000 homes.

Six projects are in the southern interior.

quA-ymn Solar Facility near Logan Lake

Why Wind and Solar?

- ✓Affordable
- ✓Quick to deploy
- ✓Scalable
- ✓Proven technology
- ✓Price certainty
- ✓Emissions-free
- ✓First Nations equity ownership opportunities
- ✓Local investment, jobs, and tax revenues

Jobs

A large wind or solar project creates approximately 150-200 jobs during development, construction and operation, leveraging the **local workforce**.

Land survey	Logging	Concreate and aggregate supply	Environmental monitoring
Equipment transport	Construction of substation	Road construction	Excavation
Power collection & comms networks	Assembly of wind turbines	Professional services	Materials transport
O&M services			

What's Next?

Projects are expected to begin construction 2027 – 2030, following environmental review and permitting.

1

Project development, community consultation and permitting

- 1 to 3 years

2

Construction

- 1 to 2 years

3

Operation and maintenance

- 30+ years

4

Repowering or decommissioning and site restoration

- 2 to 3 years

Renewable Energy 101

Solar Energy

Solar - Technologies

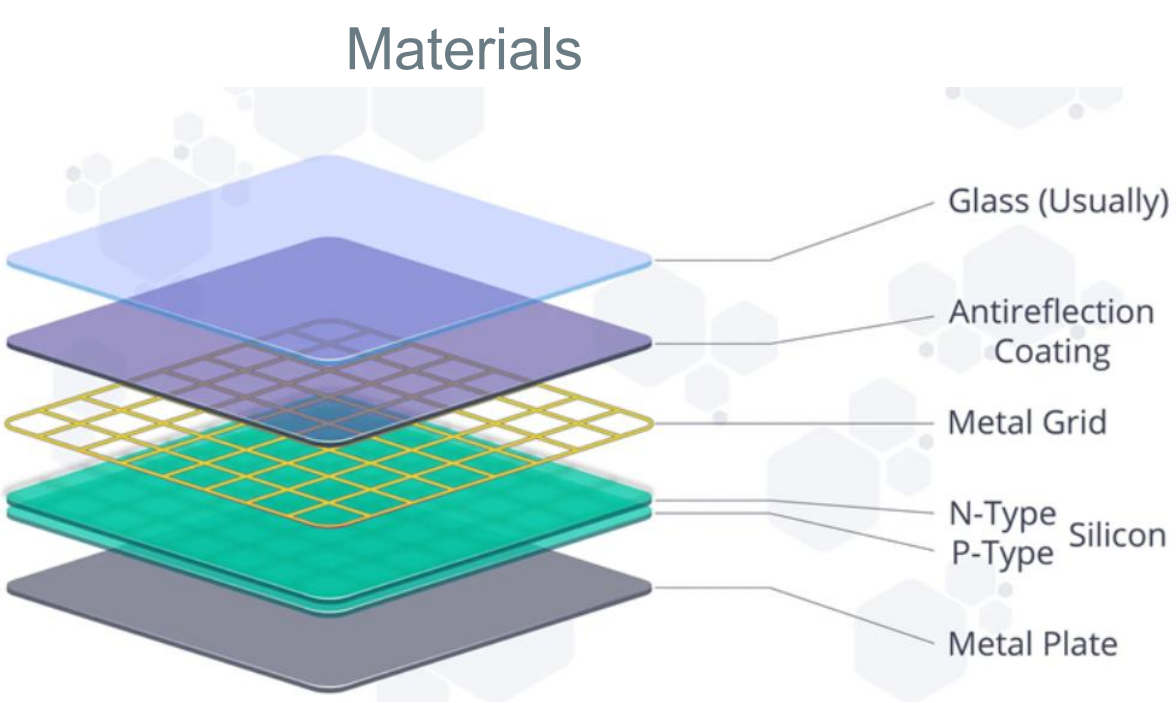
Photovoltaic (PV)

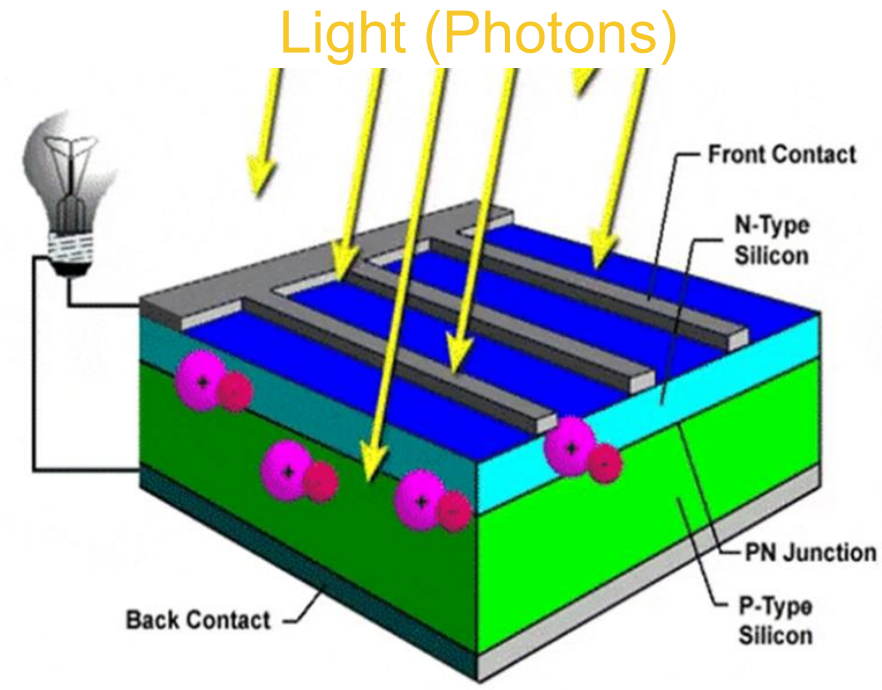
Solar Thermal

Concentrated

Solar – Photovoltaic (PV) Solar Cell

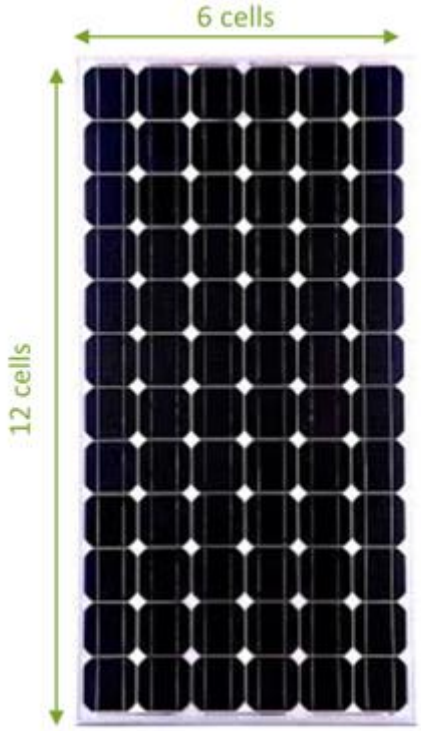
Light activates the movement of electrons between silicon layers





Solar – Terminology

one solar **Cell**



Module

(multiple cells)

Panel

(multiple modules)

Solar Array

(multiple panels)

Solar – Electrical Components

Optimizers

Grounding

Wiring

Electrical Controls

Inverter

Panel

Solar – System Components

Mounting Hardware

Racking

Cable Tray

Solar – Energy Power Flow

PV Array

DC

Combiner Box

Inverter Station

AC

Substation

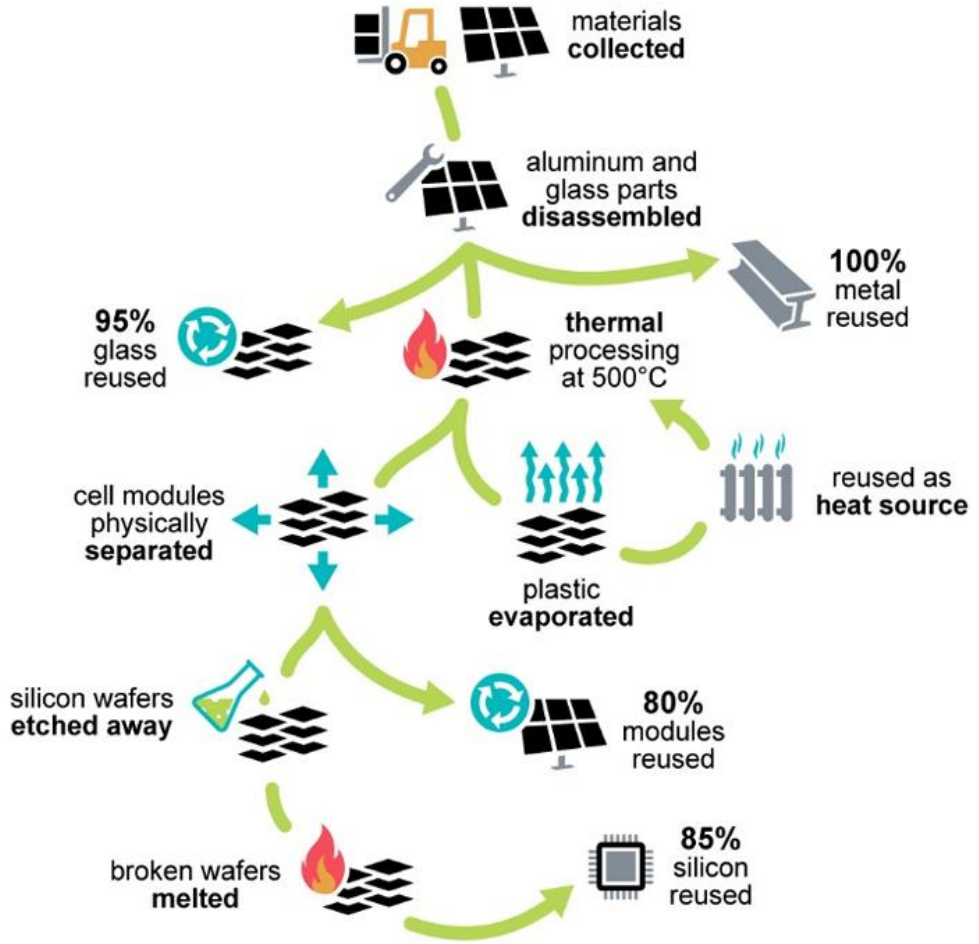
Meter

Utility Grid

End of Life Decommissioning and Recycling

- Solar power systems consist of recyclable materials: Copper (cabling), aluminum (racking), steel (posts), glass and electronic components.
- Solar project components can be reused, refurbished or upcycled at the end of their life, and eventually, they can be recycled.
    - Solar panels are 90% recyclable by mass

Recycling process for solar panels (silicon based)



Questions?

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Community Energy Association

Activity 1: Solar

1. Do solar panels produce power without sun?
2. How does angle affect efficiency?
3. Which light color will produce the most energy?
4. What will happen to the volts when heating up a solar panel?

Wind Energy

Wind – Turbine Components

Base & Foundation

Tower

Nacelle

Rotor Hub & Blades

Wind - Foundation

- Excavation
- Concrete Base

Wind - Tower

- Tubular Steel
- Sectional
- Height varies on rotor diameter
- 90-120m height (typical)

Wind – Rotor Hub

- Holds blades
- Converts kinetic (wind) energy
- Adjusts blade pitch

Wind - Blades

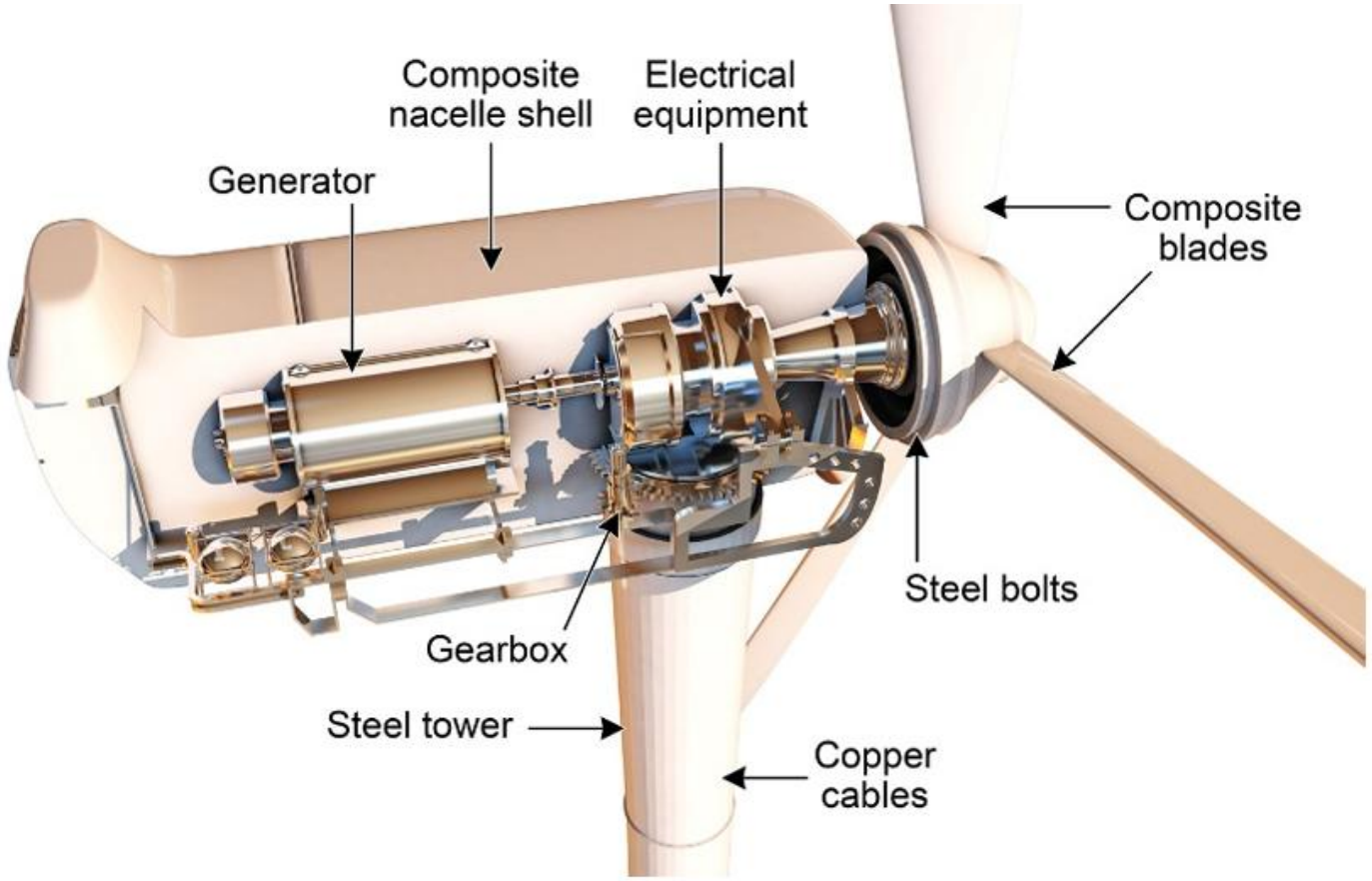
- Fiberglass and Carbon Fiber
- Balsa or Foam Core
- Reinforcing Resin
- Lightweight and durable

Wind - Nacelle

- Control Centre Housing
- Shaft & Gearbox
- Generator
- Maintenance

End of Life Decommissioning and Recycling

- Turbines are 85-90% recyclable
- Many parts retain a high value at the end of the wind turbine's life.
- Steel towers, copper cables and electrical equipment can be disassembled and recycled.
- Turbine blades made of composite materials are harder to recycle, but more options are being developed (e.g., filler in construction materials)



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Activity 2: Wind

1. How many blades do you think will produce the most electricity?
    - 2, 3 or 4?
2. What size of blade do you think will produce the most electricity?
    - Small, Medium or Large?
3. What is the most amount of electricity your group can produce?
    - Competition time!

Break (10 mins)

DISCUSSION: Renewable energy projects in the Southern Interior

RLI Rooftop Solar
Restoration Lands Inc. (RLI)
Kuby Renewable Energy
Coldstream
2 MW

quA-ymn Solar Facility
BlueEarth Renewables
Nlaka'pamux Nation Tribal Council
Logan Lake
15 MW

Shinish Creek Wind Farm
Canadian Power
Summerland
15 MW

Pennask Wind Farm
Canadian Power
Westbank
15 MW

Boulder and Elkhart Wind Project
Elemental Energy
Upper Nicola Band
Merritt
94 MW

Nicola Wind Project
Elemental Energy
Upper Nicola Band
West Kelowna
496 MW

K2 Wind Project
Innergex Renewable Energy
Westbank First Nation
Kelowna
160 MW

m.ah a temEEwuh Solar Project
BluEarth Renewables
Oregon Jack Creek
Logan Lake
104 MW

Highland Valley Wind Project
Capstone Infrastructure
Ashcroft Indian Band
Logan Lake
197 MW

Mount Mabel Wind Project
Capstone Infrastructure
Lower Nicola Indian Band
Logan Lake
143 MW

RLI Rooftop Solar Project

DIALOGUE

What are the benefits, challenges, risks, and needs?

How can we move forward together?

DISCUSSION – Question 1

What comes to mind as a top benefit or outcome of more renewable energy development in the Southern Interior?

DISCUSSION – Question 2

In your opinion, what needs to happen to capitalize on the renewable energy opportunity in the Southern Interior?

DISCUSSION – Question 3

How can we communicate the value of renewable energy for communities in the Southern Interior?

THANK YOU

Keep in touch:

With others in the room and with us.

Watch for a summary of today and the series.

What's next?

UBCM workshop and strategy session.

Explore options for your communities and organizations. Let us know if we can help.

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