

To see is to believe

Through grant funding, recipients designed, developed or expanded their digital tools to make the impacts of energy efficiency and renewable energy experiential.



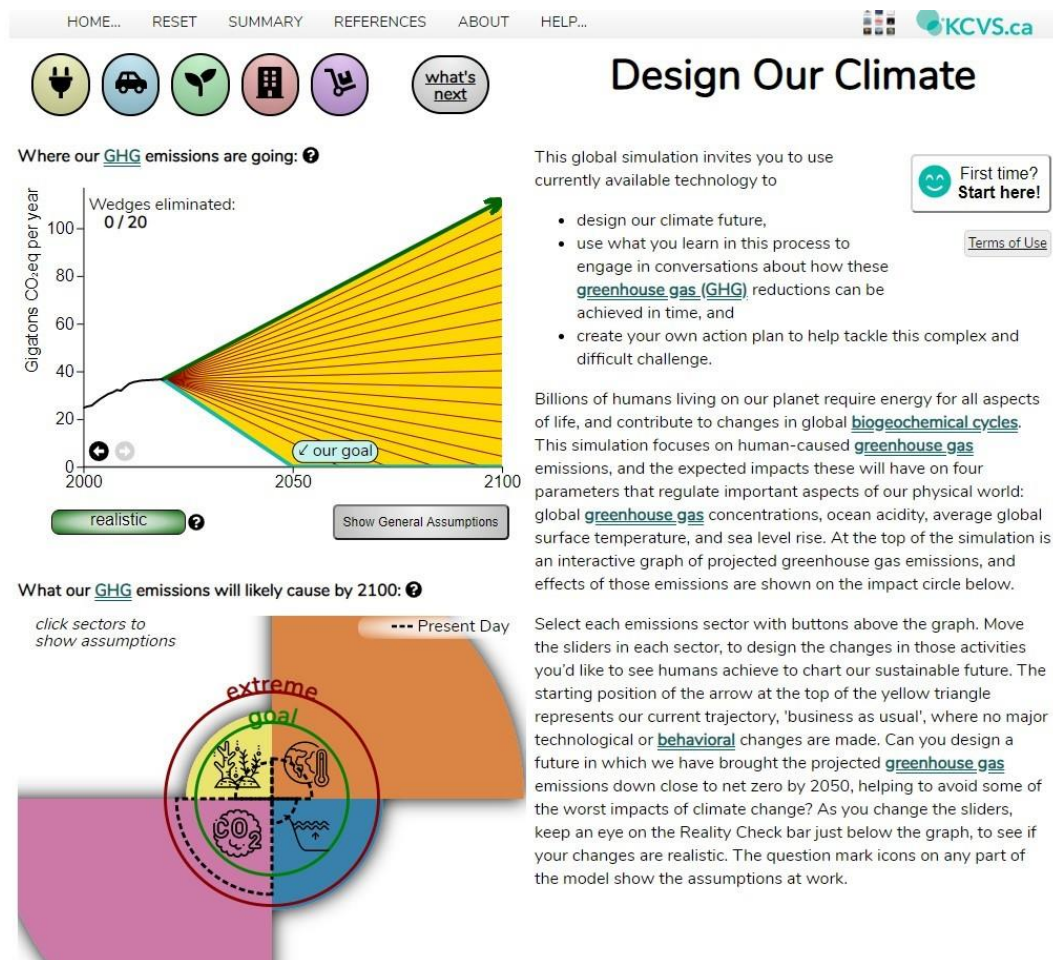
Efficiency goes digital in Alberta

We challenged Alberta non-profit organizations to be innovative about energy efficiency, and we weren't disappointed. Through grant funding, recipients were able to design, develop or expand their digital tools to make the impacts of energy efficiency and renewable energy experiential. Here is a collection of tools that were developed to make efficiency and renewable energy more accessible across the province.

The Kings Centre for Visualization in Science

[Design our Climate](#), a highly visual simulation engages you in an interactive exploration of how much of a difference we can make through informed choices about electricity, transportation, land use, buildings, and materials. By moving

“sliders” you change the energy and conservation mix to show the resulting impact on global greenhouse gas emissions. You can increase or decrease number of things like LEDs used, carbon intensity of buildings, and amount of solar and geothermal energy generated to impact the overall global GHG emissions graph. It is also accompanied by teaching resources for us in class.



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Design Our Climate

Where our **GHG** emissions are going: ?

Gigatons CO₂eq per year

Wedges eliminated:
0 / 20

2000 2050 2100

realistic ?

Show General Assumptions

First time?
Start here!

Terms of Use

- design our climate future,
- use what you learn in this process to engage in conversations about how these **greenhouse gas (GHG)** reductions can be achieved in time, and
- create your own action plan to help tackle this complex and difficult challenge.

Billions of humans living on our planet require energy for all aspects of life, and contribute to changes in global **biogeochemical cycles**. This simulation focuses on human-caused **greenhouse gas** emissions, and the expected impacts these will have on four parameters that regulate important aspects of our physical world: global **greenhouse gas** concentrations, ocean acidity, average global surface temperature, and sea level rise. At the top of the simulation is an interactive graph of projected greenhouse gas emissions, and effects of those emissions are shown on the impact circle below.

Select each emissions sector with buttons above the graph. Move the sliders in each sector, to design the changes in those activities you'd like to see humans achieve to chart our sustainable future. The starting position of the arrow at the top of the yellow triangle represents our current trajectory, 'business as usual', where no major technological or **behavioral** changes are made. Can you design a future in which we have brought the projected **greenhouse gas** emissions down close to net zero by 2050, helping to avoid some of the worst impacts of climate change? As you change the sliders, keep an eye on the Reality Check bar just below the graph, to see if your changes are realistic. The question mark icons on any part of the model show the assumptions at work.

click sectors to show assumptions

--- Present Day

extreme
goal
CO₂
sea level rise

Kings Centre for the Visualization of Science Design our Climate tool.

Decentralised Energy Canada

Over the past year, Decentralised Energy Canada has been developing a [Community Energy Guidebook](#), primarily for rural and indigenous communities. Community Energy benefits for communities include increased investment, local job creation, and community energy

resiliency. Focused on responding to the needs of decision makers, such as Mayors, Chiefs, Bands, Councils and Administrative Officers in navigating the process from ideation to operations, the guidebook and toolkit will help communities consider their long term needs and challenges in building energy resilience in their local economy.

Alberta Tomorrow

The [Alberta Tomorrow simulator](#) is an educational tool that helps Albertans to understand the process of sustainable planning to balance land-uses such as agriculture, oil and gas and forestry with ecological integrity. By looking at past and present landscape imagery, you will be able to see changes that have taken place in the past. Funding from the Energy Efficiency Education grant program enable Alberta Tomorrow to launch a new simulator that includes the effects of energy efficiency and renewable energy. With the teacher resources that accompany the simulator, students can:

- **view videos and discover the potential benefits and impacts of different land-uses and land-use practices in Alberta;**
- **improve the understanding of Alberta’s ecosystems and environmental resources;**
- **develop their own plan for Alberta’s future;**
- **track and share water quality and land-use observations with other classes throughout Alberta.**

Student Energy

Student Energy empowers young leaders and Albertans to become champions in their own communities on the transition to a sustainable, equitable energy future. Their [Energy Systems Map](#) allows students and all Albertans to visualize and explore Alberta’s energy system, starting with energy sources and connecting all the way to the end users.

Canadian Geothermal Energy Association

Recognizing the increasing importance of geothermal energy on the Alberta landscape, [CanGEA’s](#) mission is to unlock the country’s tremendous geothermal energy potential. With Energy Efficiency Alberta grant funding, they developed the “Handbook for

Community Geothermal Power and Heat Generation” as a comprehensive tool for Albertan communities to understand the development of geothermal heat-to-power generation projects under the Small Scale Generation Regulation. If you are interested in the Handbook, please [contact CanGEA](#) for more information.

NAIT

Energy Efficiency is the lowest cost way to reduce GHG emissions, but it is a hard concept to visualize and understand. NAIT undertook an ambitious project to do just that. Students that were part of the [Alternative Energy Program](#) designed and constructed a transportable residential energy efficiency demonstration building, which will be used for years to come as an instructional and interpretive platform.

These tools were developed as part of Energy Efficiency Alberta’s Energy Efficiency Education Grants Program and Community Generation Capacity Building program. Each tool represents a potential gateway into learning more about energy efficiency and renewable energy, and bringing energy savings and generation into communities across the province.

For support using the tools, or to learn more about where to start with energy efficiency or renewable energy, any one of the non-profits listed would gladly assist.