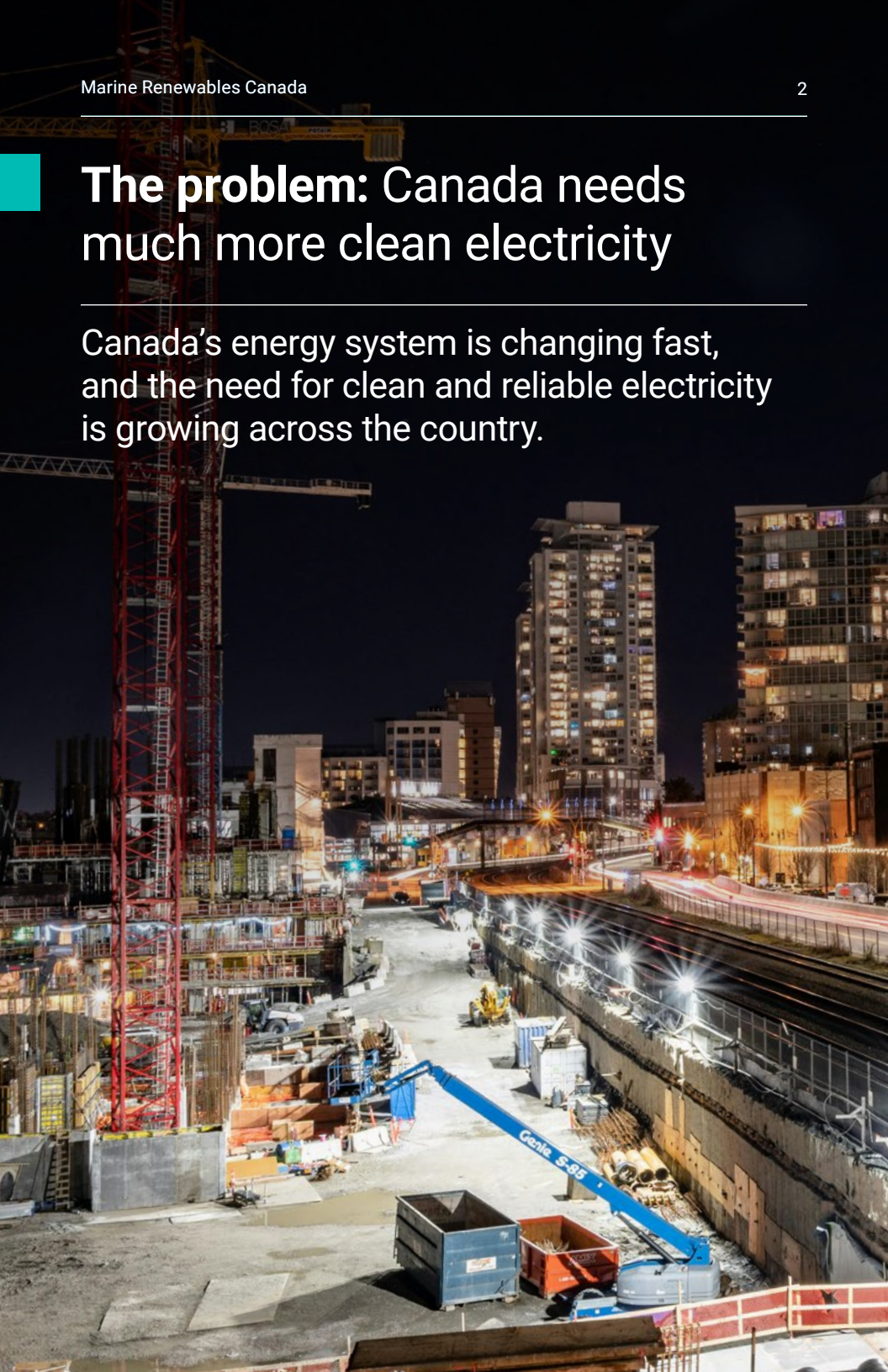
marine
renewables
canada

Marine renewables may just be what Canada needs.

Right now. And in the future.

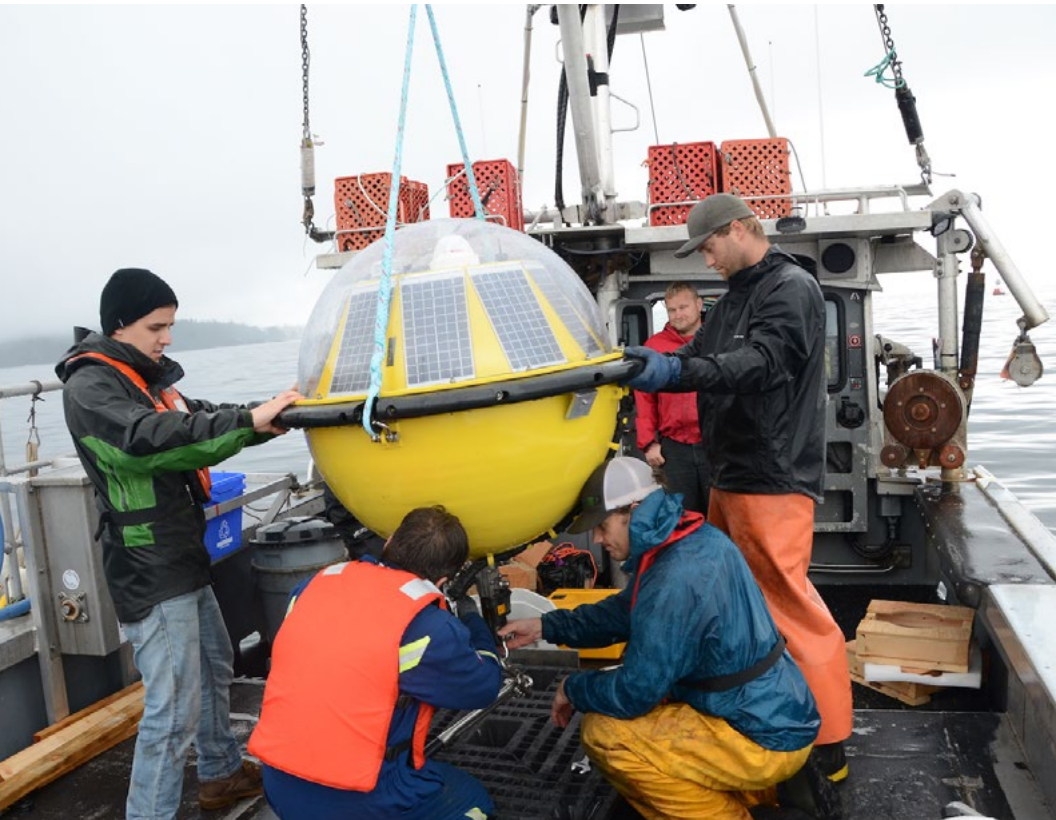
The problem: Canada needs much more clean electricity

Canada's energy system is changing fast, and the need for clean and reliable electricity is growing across the country.



There are four main reasons for this:

1. **Electricity demand across Canada is expected to double or even triple by 2050** as we switch to electric vehicles, heat our homes with electricity instead of fossil fuels, power new industries, and support growing needs like data centres and clean fuel production.
2. **Across Canada, approximately 280 remote and Indigenous communities primarily rely on costly power generation from fossil fuels - mainly diesel and propane.** Many of these communities are located near strong marine renewable resources. Using energy from the ocean, tides, rivers, and offshore winds can reduce or replace diesel use. This can lower costs, improve reliability, and make local power systems more resilient.



3. **Canada has committed to a clean electricity system by 2050.** This means producing electricity with little to no greenhouse gas pollution. To reach this goal, Canada will need to produce at least twice as much clean electricity than it does today.
4. **Canadians expect electricity to be affordable, reliable, and environmentally responsible.** Meeting all of these expectations means building more clean power - and doing it the right way.

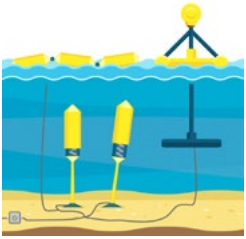
Marine renewable energy offers a powerful opportunity to meet these challenges - using the natural energy of our oceans, tides, rivers, and offshore winds to build a stronger, cleaner future for communities across the country.

The solution: Canada has abundant marine renewable sources

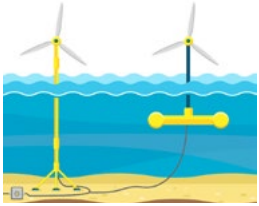
Canada has the longest coastlines and the most powerful tides in the world, along with strong winds, and over 8,700 rivers.

Marine renewable energy - wave, tidal, offshore wind, and river current - generates electricity from these natural forces in marine and freshwater environments.

Tidal energy uses predictable ocean tides to generate electricity from moving water.



Wave energy converts the motion of ocean waves into power.



Offshore wind captures strong, consistent winds at sea using large turbines.

River current energy harnesses the steady flow of rivers without using dams.

These technologies produce clean electricity using resources that Canada has in abundance.

What can marine renewables offer?

Power you can count on

Marine energy resources are highly predictable - tides are driven by the moon, waves and winds can be forecast days in advance, and river currents flow steadily. That means marine renewables can provide power when people need it, and work well alongside other energy sources like onshore wind and solar to keep the lights on.

Lower costs over time and energy security

Once marine renewable projects are built, they do not need fuel. That means no fuel price spikes and fewer surprises on electricity bills. Over time, this can help keep power more affordable and reduce Canada's reliance on imported fuels.

Stronger communities

Marine renewables are a good fit for coastal, remote, and Indigenous communities. When combined with wind, solar, and batteries, they can reduce or replace diesel power. This makes energy systems cleaner, quieter, and more reliable. Local ownership and partnerships mean jobs, income, and long-term benefits stay in the community. Energy sovereignty grows when communities have more control over their own power.

Good jobs close to home

Canada's marine and offshore workers already have many of the skills needed to support marine renewable energy. These jobs include building and repairing equipment, working in ports and shipyards, providing marine services, installing and maintaining systems, and protecting the environment through monitoring and research.

As marine renewables grow, they can support good, long-term jobs and help keep coastal economies strong. In fact, building marine renewable projects could bring about $12 billion into Canada's economy by 2050 through construction work alone - much of it in coastal and rural communities.

Can marine renewable energy be developed responsibly?

Marine renewable energy must be developed carefully and responsibly. Our oceans, rivers, and coastlines are shared spaces that support wildlife, food, jobs, and culture. For many coastal and Indigenous communities, these waters are also deeply tied to identity, traditions, and ways of life. Getting this right matters. The good news is that Canada is not starting from scratch.

Marine renewable energy has already been tested and studied in real ocean conditions, both here and around the world.

This work has shown that when projects are planned with care, strong science, and community partnership, marine renewables can coexist with fishing, shipping, recreation, and healthy marine ecosystems.

Responsible development means choosing the right places, using smart design and technology, and learning as projects move forward.

It includes environmental studies before projects begin, ongoing monitoring once they are in the water, and the ability to adapt if new information becomes available.

It also means listening to people who know these waters best - especially Indigenous Peoples, fishers, and coastal communities - and involving them early and meaningfully in decisions.

Marine renewable energy has potential impacts, but climate change poses a far greater threat to oceans, wildlife, and communities everywhere. Rising temperatures, changing marine habitats, stronger storms, and ocean acidification are already affecting life in the water and on land. Reducing greenhouse gas pollution is essential to protecting the planet for future generations.

By developing marine renewable energy responsibly, Canada can help address the climate crisis while protecting ocean health, supporting communities, and creating a cleaner, more resilient future for people and nature alike.

Marine renewables need some help

Marine renewable energy is a shared opportunity for communities, governments, and industry across Canada.

To help turn this opportunity into reality, Marine Renewables Canada developed the *Marine Renewable Energy Sector Vision 2050*. The Vision provides a clear roadmap for the years ahead, with 14 practical recommendations to responsibly grow this largely untapped energy potential.

The goal is simple: by working together, Canada can harness the power of its oceans, tides, winds, and rivers in a way that is responsible, inclusive, and forward-looking. Doing so can help build a clean and resilient energy system that supports local communities, protects the environment, and delivers lasting benefits for future generations.

The Vision shows how thoughtful planning, strong partnerships, and long-term commitment can help marine renewable energy move from early projects to real-world solutions that power homes, create jobs, and strengthen energy security across the country.

Learn more at: www.marinerenewables.ca/vision

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