

Regulation of Coastal, Ocean and Related Subsurface Engineering

The engineering profession's position

- The engineering profession believes that public interest is best served when all engineering work, including in offshore areas, is regulated by the provincial or territorial regulator where the equipment is deployed..
- In instances where engineering facilities are utilized or engineering activities are conducted outside of provincial or territorial jurisdiction but under federal government jurisdiction, it is in the public interest that federal regulations provide the same level of assurance as those that provincial and territorial engineering regulators enforce, including the requirement that engineers working on coastal, ocean and subsurface projects be licensed. Such instances include engineering facilities or activities either on the oceans, in the associated water columns, on the ocean bottom or beneath the ocean bottom.
- There are complex regulatory structures that manage oil and gas operations in Canada's offshore areas; however, these federal regulatory instruments do not regulate engineering practitioners. Requiring these practitioners to be licensed by provincial and territorial engineering regulators would ensure the same level of public protection for offshore engineering as on land.
- There are emerging areas of offshore engineering such as wind generation and mining of the ocean bottom that require proactively establishing professional expectations to ensure public safety.

The challenge(s)

As the climate warms, the practice of offshore engineering work may expand into locations previously inaccessible to such activities, such as the Arctic Ocean, and is likely to increase in the Atlantic and Pacific, off Canada's shores. Offshore activities may also increasingly include offshore wind generation and mining, both on the ocean bottom and underneath the ocean bottom.¹ The United Nations Convention on the Law of the Sea (UNCLOS) establishes guidelines to protect the natural environment, as well as providing guidelines for businesses around the management of marine natural resources. Article 81 of UNCLOS states that the coastal State has exclusive rights to authorize and regulate drilling on the continental shelf for all purposes.²

Federally, Canada has a set of four principal Acts that govern oil and gas activities offshore. In 2019, the Government of Canada established the new Canada Energy Regulator (CER) under

¹ World Resources Institute. What We Know about Deep Sea Mining. Retrieved March 11, 2024 from: <https://www.wri.org/insights/deep-sea-mining-explained>.

² United Nations Convention on the Law of the Sea. Retrieved August 31, 2018, from: http://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf.

Natural Resources Canada, to replace the previous National Energy Board. While the CER is responsible for regulating the interprovincial and international energy sector, including offshore oil and gas activities that are not under provincial or territorial regulation, it does not regulate offshore engineering work specifically.

Even though provincial and territorial engineering Acts provide for the regulation of engineering work conducted on land, there are currently no provincial, territorial or federal provisions for the regulation of engineering work done offshore. Currently, infrastructure to be used offshore that is designed and built outside of Canadian limits is not subject to Canadian engineering regulation. Yet, infrastructure built or designed in Canada is subject to provincial or territorial engineering regulation.

What the provincial and territorial regulators have done

In Canada, engineering is a regulated profession, and individuals who call themselves an engineer, a P.Eng., or use a similar title (suggesting they are qualified to practise engineering) must hold a P.Eng. licence with one of Canada's 12 provincial or territorial engineering regulators. The self-regulation of the engineering profession in Canada ensures that engineers adhere to high professional and ethical standards and practise in the public interest. It is imperative to have strengthened regulatory mechanisms to manage operations in Canada's offshore areas for activities performed outside of Canada's provincial or territorial government's jurisdiction that are within the federal government's control.

The provincial and territorial engineering regulators believe that it is in the public interest that all infrastructure designed, built, or used within Canada—including in its offshore areas—must be regulated in a manner similar to that which the provincial or territorial engineering regulators currently do for engineering work done on land. Regulation minimizes the risks to workers and the environment and ensures that these activities are conducted by engineers who are held to high professional and ethical standards that require them to work in the public interest.

Professional Engineers and Geoscientists Newfoundland & Labrador (PEGNL) published Practice Guidelines for Authenticating Professional Documents in 2021, which included guidance on the authentication of offshore drilling documents. It outlines that professional documents prepared in Canada for use outside of the 12-mile Canadian territorial limit (i.e. in international waters), shall be authenticated by a professional license holder licensed in the Canadian jurisdiction where the engineering or geosciences practice was carried out. If the device is designed outside of the province for use in international waters but is brought to the province for assembly, for incorporation into another assembly, or for testing or commissioning, the documents detailing the assembly, incorporation, testing, or commissioning shall be authenticated by a PEGNL professional licence holder, and permit holder if applicable, using PEGNL stamps.

PEGNL authentication is required when a device intended for use outside of the 12-mile Canadian territorial limit meets any one of the following conditions:

1. Designed in Newfoundland and Labrador
2. Built in Newfoundland and Labrador
3. Integrated into or installed in an assembly in Newfoundland and Labrador
4. Tested or commissioned in Newfoundland and Labrador

If the device intended for use in international waters does not meet any of these conditions, unfortunately no PEGNL authentication is required. There are significant engineering activities that do not meet these criteria and therefore are not subject to engineering regulation.

Additionally, Engineers and Geoscientists BC has developed Professional Practice Guidelines on Developing Climate Change-Resilient Designs for Highway Infrastructure in BC that have been widely referenced and adopted by other authorities having jurisdiction. These Practice Guidelines are applicable to the development of offshore infrastructure such as offshore wind farms and coastal infrastructure such as ports and coastal defense structures.

Recommendations to the federal government

When engineers are not directly involved in the design, review, implementation, and maintenance of projects that require the application of engineering practices, the project places public safety at risk and fails to address environmental, social and economic impacts. Where engineering work is being performed, it is in the public interest that an engineer be involved. Legislation that speaks to engineering work, regardless of whether it is under federal, territorial or provincial jurisdiction, should require the involvement of qualified engineers. These engineers must be licensed through a provincial or territorial engineering regulator.

The federal government must continue to engage with engineering regulators as they consider better regulation for activities with engineering components performed outside of provincial or territorial jurisdiction but within federal control. The public interest is best served when such engineering matters are regulated to at least the standard to which they are regulated on land.

How Engineers Canada will contribute:

Engineers Canada will:

1. Actively identify opportunities to incorporate provincial and territorial regulations within offshore engineering legislation and regulations where such involvement would be in the public interest.
2. Work collaboratively with provincial and territorial regulators to promote the regulation of offshore engineering and make practice guidelines accessible.
3. Identify opportunities to work with the federal government to inform regulation for activities performed outside of provincial or territorial jurisdiction but within federal control.