

Canada's Clean Hydrogen Tax Credit takes shape

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The 2023 federal budget (the 2023 Budget) delivers on the [Federal Government's promise](#) to provide significant tax credits to help Canada meet its climate change goals and reduce carbon emissions. The suite of tax credits includes the refundable clean technology investment tax credit (the Clean Tech Credit), the clean hydrogen tax credit (the Clean Hydrogen Credit), the clean technology tax incentives for air-source heat pumps (the Clean Tech Incentives), the investment tax credit for carbon capture, utilization and storage (the CCUS Tax Credit) and the clean electricity tax credit (the Clean Electricity Credit, together the Climate Change Tax Credits). This article focuses on the Clean Hydrogen Credit.

The Federal Government's introduction of the Climate Change Tax Credits is due in large part to the tax incentives put in place by the Biden administration as part of the Inflation Reduction Act (the IRA), which was passed in August 2022.

The IRA carried with it significant tax reform focussed on climate change initiatives. One such measure included an investment tax credit ranging between 6 and 30 per cent of the capital cost of qualifying equipment for production of hydrogen. The IRA also included a hydrogen production tax credit ranging between US\$0.60 and US\$3.00 per kilogram of hydrogen produced. Both the investment and production tax credits are determined on a sliding scale depending on the emissions intensity of the hydrogen production process.

The Canadian government's Budget 2023 provided a framework to institute the Clean Hydrogen Credit, which is a form of investment tax credit. Budget 2023 did not include a hydrogen production tax credit. The estimated cost for the Clean Hydrogen Credit to be incurred by the Federal Government over the next five years is \$5.56 billion. Like the United States, the term "tax credit" when used in the Canadian context refers to an amount of money that taxpayers can subtract directly from the taxes they owe and represents a direct subsidy. Tax credits differ from tax deductions, which lower the amount of a taxpayer's taxable income. The tax credits are also refundable, such that even with no taxes owed, taxpayers can still apply for any refundable credits for which they qualify and receive the amount of the credit or credits as a refund.

Eligible equipment

The Clean Hydrogen Credit provides refundable credits on the cost of purchasing and installing equipment acquired and available for use on or after March 28, 2023. This includes equipment where substantially all the use of that equipment is required as part of the production process (collectively, the Eligible Equipment Requirements) in a project substantially dedicated to the production of hydrogen (excluding excess electricity that may be sold to the electricity grid) by way of either:

1. Electrolysis; or
2. **Through natural gas reformation, specifically “blue hydrogen”** (i.e., where CO₂ emissions are abated using carbon capture, utilization, and storage (CCUS)), excluding equipment already described in tax depreciation Class 57 or Class 58, which is otherwise eligible for the CCUS Tax Credit (Collectively, the Eligible Project Requirements).

Also included are the following types of equipment expenditures:

- Oxygen production equipment used for hydrogen production, as long as the resulting CO₂ is captured by a CCUS process.
- Equipment that produces heat and/or power from natural gas or hydrogen.
- Dual use power or heat production equipment would be eligible only if the energy balance is expected to be primarily used (i.e., more than 50 per cent) to support the CCUS process or hydrogen production that is eligible for the Clean Hydrogen Credit. For the purpose of the Clean Hydrogen Credit, the cost of this equipment would be pro-rated in proportion to the expected energy balance supporting the hydrogen production process. CO₂ emissions from power and/or heat production equipment would need to be captured and stored or used for the equipment to be eligible.
- Clean Ammonia: Property that is required to convert clean hydrogen (i.e., meets a carbon intensity (CI) of less than 4 kg of CO₂e per kg of hydrogen) to clean ammonia would also be eligible for the Clean Hydrogen Credit, at the lowest credit rate of 15 per cent.

Expenditures not included

Other expenses that may be related to a hydrogen production project, including feasibility studies, front-end engineering design studies, and operating expenses, are not eligible for the Clean Hydrogen Credit.

Tax credit rates

The rate of the applicable credit is dependant on the assessed carbon intensity (CI) of the hydrogen that is produced, and ranges from between 15 and 40 per cent of the cost of purchasing and installing qualifying capital cost of equipment, assuming certain labour requirements are met.

Carbon intensity tier (kg of CO ₂ emissions per kg of hydrogen produced)	Rate of tax credit applied to eligible costs (per cent)
< 0.75 kg	40 per cent

0.75 kg < 2 kg	25 per cent
2.0 kg to < 4.0 kg	15 per cent

The tax credit rates as provided above are expected to apply fully up until 2033. In 2034, the Clean Hydrogen Credit will be reduced by ½, and fully phased out in 2035.

Carbon intensity

CI will be based on the Fuel Life Cycle Assessment (LCA) Model maintained by Environment and Climate Change Canada. The CI of the hydrogen produced considers the emissions from “cradle-to-gate,” meaning the assessment considers upstream emissions.

For the purposes of measuring CI, captured CO2 must be stored via an “eligible use” as defined for purposes of the CCUS Tax Credit (which includes dedicated geological storage or storage in concrete). CO2 stored or used in any other way (including enhanced oil recovery) is treated as if it were released into the atmosphere for the purposes of assessing the CI of the hydrogen produced.

Requirements

To qualify for the full Clean Hydrogen Credit, certain labour requirements must be satisfied.

- Total compensation package must equate to the prevailing wage based on most recent, widely applicable multi-employer collective bargaining agreement or corresponding project labour agreements.
- At least 10 per cent of the tradesperson hours worked must be performed by registered apprentices in the Red Seal trades (collectively, the Labour Requirements).

If a taxpayer does not meet the Labour Requirements, the credit rate for each CI tier will be reduced by 10 percentage points (e.g., a taxpayer who qualifies for the 40 per cent credit rate who does not meet the Labour Requirements would have their credit rate reduced to 30per cent).

Verification and ongoing compliance is also required and based on the following three procedures:

- The completion of a front-end engineering design study of the project.
- The completion of a project CI assessment based on LCA Model, which will be used to establish the credit rate (the Approved Credit Rate) between 15 per cent to 40 per cent available under the Clean Hydrogen Credit.
- **Once operational, during a to-be-determined “assessment period,”** the requirement to demonstrate (by way of an independent third-party) that the CI of

the project falls into the same tier the project was previously assessed at in step two (collectively, the Verification/Compliance Requirements).

Post-operational claw-back of Clean Hydrogen Credit

If a project fails to achieve a CI of hydrogen in the same CI tier at which the project was initially assessed, the Clean Hydrogen Credit will be clawed-back by the amount that is equal to the difference between: (i) the Approved Credit Rate tier **less** (ii) the Clean Hydrogen Credit amount that would apply based on the CI tier that is validated during operations.

In addition, the Clean Hydrogen Credit will be clawed-back entirely if a project that produces hydrogen from natural gas does so without operating its CCUS equipment (so that emissions fail to be captured).

Interactions with other credits

If a particular piece of equipment is eligible for both the Clean Hydrogen Credit and another Climate Change Tax Credits, the taxpayer may only claim one investment credit. However, multiple tax credits can be applied for the same project, provided the project includes different types of eligible property.

Taxpayers can fully benefit from both the Clean Hydrogen Credit and the Atlantic Investment Tax Credit. Accordingly, the Clean Hydrogen Credit will not reduce the cost of the property that is used to determine the amount of the Atlantic Investment Tax Credit.

No production tax credit

As noted above, the IRA also introduced a production tax credit applicable to hydrogen. The Canadian Federal Government has elected not to introduce a production tax credit. However, if the goal of the Federal Government was to match the U.S. hydrogen production incentives, they may have decided that this could be achieved completely through more favorable hydrogen investment credits. The maximum rate of hydrogen investment tax credits in the U.S. is effectively 18 per cent (6 per cent x 30 per cent) compared to the proposed Canadian rate of 40 per cent.

Furthermore, Canada also has a federal carbon price in place, which applies across all provinces and territories, whether administered by the Output Based Pricing System as the federal backstop, or by the provinces with equivalent provincial programs. The carbon tax, currently sitting at \$65/tonne CO₂e and slated to hit \$170/tonne CO₂e by 2030, raises the price of fossil fuels, making grey hydrogen more expensive to produce.

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