The title text is centered on the right side of the page, set against a blue background with a white grid pattern. It is flanked by two large, light blue, curved arrow-like shapes pointing towards each other.

**Bruce C Project.
Planning for the
Next Generation.**

PLANT PARAMETER
ENVELOPE PLAIN
LANGUAGE SUMMARY

February 2026

Contents

1 Introduction

3 Alternative Means Assessment

4 What is a Plant Parameter Envelope?

5 Key Aspects

6 Types of Reactors Being Considered

- CANDU MONARK
- AP1000
- EPR
- BWRX-300
- ABWR

7 How a Plant Parameter Envelope is Created

8 Bounding Parameter Examples

- Net Electrical Power
- Number of Reactor Units
- Number of Standby Generators for the Project
- Permanent Total Area
- Height
- Depth

10 Effects of the Project

12 Conclusion



Introduction

Bruce Power is evaluating the feasibility of expanding its nuclear fleet, to create an option for future electricity planning. The Bruce C Project (the Project) will evaluate the impact of adding up to 4,800 megawatts electric (MWe) of nuclear capacity on the existing Bruce Power site.

The Bruce C Project Impact Assessment is taking a reactor-neutral approach, meaning that multiple reactor technologies will be evaluated to determine the potential positive and negative effects of the Project, without deciding on a specific reactor design. This approach is known as a Plant Parameter Envelope (PPE).

Information on the use of the PPE was provided in the Bruce C [Initial Project Description](#) (IPD), and in Bruce Power's [Response to the Summary of Issues](#). The following document has been prepared to fulfill the requirements of Section 3.4.1 of the Bruce C [Integrated Tailored Impact Statement Guidelines](#) (TISG). To facilitate meaningful engagement with Indigenous Nations and Communities and the public on the use of the PPE, the TISG requires Bruce Power to submit this plain language summary of the information required in Section 3.4.1 in advance of the submission of the Bruce C Impact Statement and Licence to Prepare Site application.

Bruce Power recognizes that the Bruce Power site is located within the Saugeen Ojibway Nation Territory, the shared treaty and traditional Territory of the Chippewas of Saugeen First Nation and Chippewas of Nawash Unceded First Nation (Neyaashiinigmiing). Bruce Power is dedicated to honouring Indigenous history and culture and is committed to moving forward in the spirit of reconciliation and respect with the Indigenous Nations and Communities we work with. We are committed to strong and respectful relationships with the Saugeen Ojibway Nation (SON), the Métis Nation of Ontario Region 7 (MNO) and Historic Saugeen Métis (HSM).

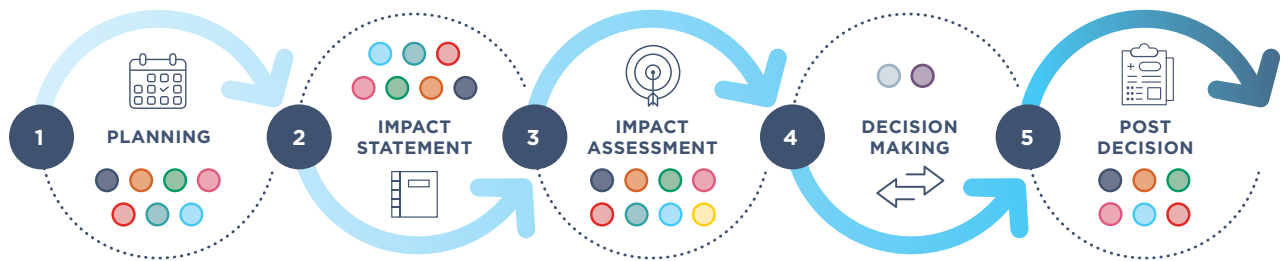
Engagement is a critical part of the Impact Assessment process. Bruce Power is committed to engage with Indigenous Nations and Communities, Municipalities and Counties to incorporate knowledge shared with Bruce Power to understand the potential positive or negative impacts of the Project.

Impact Assessment Process

Bruce Power is undertaking a federal integrated Impact Assessment process to identify and assess potential positive and negative effects that new nuclear generation would have on the environment, Indigenous Nations and Communities, municipalities, and the public.

An Impact Assessment is a phased planning process that happens over multiple years. It helps identify and assess the possible positive and negative impacts of a project before any decision is made. The process involves engagement with Indigenous Nations and Communities, municipalities and the public. To facilitate meaningful engagement with Indigenous Nations and Communities and the public on the use of the PPE, the TISG requires Bruce Power to submit a plain language summary of the information required in Section 3.4.1 in advance of the submission of the Bruce C Impact Statement.

More information about the Impact Assessment process can be found at the Canadian Impact Assessment Registry page for the Bruce C Project: [**Bruce C Nuclear Project**](#)



KEY PARTICIPANTS IN THE IMPACT ASSESSMENT SYSTEM





Alternative Means Assessment

Section 4.4 of the TISG requires Bruce Power to identify and consider the alternative means of carrying out the Project that are technically and economically feasible.

The purpose of the Alternative Means Assessment is to understand the advantages and disadvantages of the different ways of carrying out the Project as well as the rationale for the selection of preferred options. After completing the Alternative Means Assessment, the preferred means of carrying out the Project are brought forward and assessed in the Bruce C Impact Statement.

Bruce Power provided preliminary information on key project elements to be included in the Alternative Means Assessment in the Bruce C IPD including, siting, cooling strategies, and waste management strategies. The PPE was discussed in the Alternative Means section of the Bruce C IPD to state that the Bruce C Impact Statement will utilize the PPE and selection of a preferred technology would not be made in the Alternative Means Assessment. Based on information currently known, an update on each of the key project elements is provided below.

COOLING STRATEGIES

Three cooling strategies were identified in the Bruce C IPD. It is anticipated that the two cooling strategies, once-through cooling and mechanical draft cooling towers, will be both carried through the Bruce C Impact Statement.

SITING

Three siting scenarios were identified in the Bruce C IPD. It is anticipated that one preferred siting scenario will be identified in the Alternative Means Assessment and be carried through the Bruce C Impact Statement.

WASTE MANAGEMENT

As outlined in the Bruce C IPD and the Response to Summary of Issues, it is anticipated that the Bruce C Impact Statement will assess the effects of alternatives for waste management associated with the Project including:

- Interim storage of low-level and intermediate-level waste at one or more existing or new appropriately licensed facilities.
- Interim storage of high-level waste at an existing or new appropriately licensed facility at the Bruce Power site, with high-level waste contained in fuel specific dry storage containers.

Currently, Bruce Power is completing the Alternative Means Assessment that will be provided as part of the Bruce C Impact Statement. Engagement is a critical part of the Alternative Means Assessment, and Bruce Power is engaging with Indigenous Nations and Communities, the Municipal Bruce C Project Coordinators, and the public to complete the Alternative Means Assessment. This information has been included as requested by IAAC and CNSC as an update to the information Bruce Power provided in the Bruce C IPD and the Response to Summary of Issues.

What is a Plant Parameter Envelope?

A specific reactor technology has not been selected for the Project. As a result, the Impact Assessment will remain technology neutral by using a **Plant Parameter Envelope (PPE)** approach. This approach allows the Impact Assessment to proceed while technology selection is still being evaluated; thereby providing flexibility to both Bruce Power and the province of Ontario before committing to a specific technology for future deployment.

Through the Impact Assessment process, Bruce Power will study the potential positive and negative effects of the Project – from site preparation, through construction, operation and eventual decommissioning. To understand the effects of the Project, Bruce Power needs information about how the Project is likely to interact with the environment and surrounding communities.

A PPE is a way to describe several different nuclear reactors in a single assessment by compiling the most impactful aspects, or parameters, of each of the reactors. Together these parameters describe the characteristics used to assess the effects of the Project. For each parameter, the PPE selects the most bounding or conservative value from the reactor technology options being considered for the Project. The PPE consists of values representing the greatest potential impact of each characteristic of the reactor designs considered. The PPE is considered bounding as none of the individual reactor designs would have a greater impact on the environment, socio-economic conditions or human health than what has been defined in the PPE.

The PPE is a listing of values that supports (or informs) the bounding envelope that can be used in the Impact Statement to assist in predicting the potential safety and environmental effects of a nuclear reactor facility at a particular site.

Advantages of a PPE

CREDIBLE

- Clearly documents the bounding values and how they are selected
- PPE approach has been used previously in regulatory decision making processes for new nuclear power projects in both Canada and the US
- Uses information provided by the technology vendors, or leverages publicly available information

CONSERVATIVE

- Covers the most bounding or conservative parameters from all reactor choices under consideration

EFFECTIVE

- Focuses on the information needed for the Impact Assessment

As outlined in the TISG, the underpinning concept of the bounding approach is that the environmental effects of the reactor design, eventually selected for construction, should be less than the bounding effects assessed in the Impact Statement. The design that is eventually selected for construction does not need to be specifically referenced in the Impact Statement, but the design would fit within the bounding envelope in the approved integrated assessment and licensing process. The final evaluation of the reactor technology against the PPE would be performed once a reactor technology is selected.

Key Aspects

For a nuclear project, the PPE covers many different parameters, from the amount of land area needed, to the temperature of cooling water.

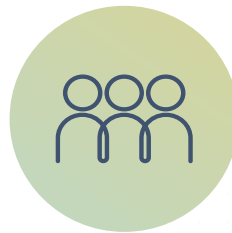
Some of the main areas the PPE considers include:



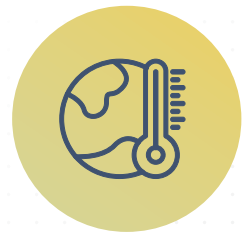
POWER PRODUCTION



FUEL TYPES AND AMOUNTS



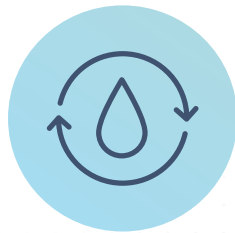
NUMBER OF WORKERS



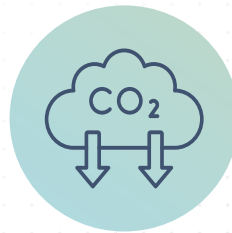
HEAT TRANSFER TO THE ENVIRONMENT



STANDBY POWER GENERATION



WATER TREATMENT AND USE



EMISSIONS FROM THE PLANT



LAND USE



BUILDING SIZES, HEIGHTS AND EXCAVATION DEPTHS



MAINTENANCE NEEDS



RADIOACTIVE/NON-RADIOACTIVE WASTE TYPES AND AMOUNTS

Types of Reactors Being Considered

The five technologies included in the Project's PPE were provided in the Bruce C IPD. Information about each of the reactors is provided below.

- CANDU Monark
- Advanced Passive 1000 (AP1000)
- European Pressurized Water Reactor (EPR)
- Boiling Water Reactor 10th Generation (BWRX-300)
- Advanced Boiling Water Reactor (ABWR)

CANDU MONARK



The CANDU Monark reactor is a pressurized heavy water reactor designed by Atkins Réalis. It is similar to the technology already in use in Canada, including at both Bruce A and Bruce B. Each reactor can produce approximately 915 MWe of electricity, therefore the Project could deploy up to four of these units for a total output of 3,660 MWe.

AP1000



The AP1000 reactor is a pressurized water reactor designed by Westinghouse. Both the United States and China currently use this technology. Each reactor can produce approximately 1,200 MWe of net electricity, therefore the Project could have up to four of these units for a total output of 4,800 MWe.

EPR



The EPR reactor is a pressurized water reactor designed by Électricité de France. This technology is used in France, Finland, the United Kingdom, and China. Of the technologies under consideration, the EPR generates the largest amount of electricity in each reactor. Each reactor can produce approximately 1,600 MWe of net electricity, therefore the Project could have up to three of these units for a total output of 4,800 MWe.

BWRX-300



The BWRX-300 reactor is a boiling water reactor designed by GE Hitachi Nuclear Energy. This technology is currently being built by Ontario Power Generation in Darlington, Ontario. Each reactor can produce approximately 300 MWe of net electricity. The Project could have up to eight of these units for a total of 2,400 MWe. This technology is considered a small modular reactor (SMR) based on the relatively smaller output generated from each unit.

ABWR



The ABWR reactor is a boiling water reactor designed by Hitachi-GE Nuclear Energy. Several power plants in Asia have used this technology, including reactors in Japan and in Taiwan. Each reactor can produce approximately 1,350 MWe of net electricity, therefore the Project could have up to three of these units for a total output of 4,050 MWe.

How a Plant Parameter Envelope is Created

To compile a PPE, information on each technology is first gathered from publicly available sources and from the companies that design the reactors. For each aspect or parameter, the values from all reactor technologies are compared. The most limiting value (either the minimum or the maximum) is identified as the bounding value. The bounding value of each aspect is selected to be compiled into the PPE.

For example, one parameter of the PPE is the net electricity generated from each unit. The output of each reactor technology is shown in the table below. The bounding value, to be selected to be included in the PPE, is the largest. In this case, the PPE would list 1,600 MWe as the bounding value for the net MWe per reactor unit because the output of the EPR is the highest of the five technologies in the Bruce C PPE.

Parameter	MONARK	AP1000	EPR	BWRX-300	ABWR	Bounding Value in PPE (Max)
MWe Net Per Reactor	-915	-1,200	-1,600	-300	-1,350	1,600

Bounding Parameter Examples

The following provides some examples of bounding parameters that will be used in the Bruce C PPE. The parameters described here are based on current knowledge and are subject to change as additional information becomes available. The Bruce C PPE will be submitted with the Bruce C Impact Statement.

NUMBER OF REACTOR UNITS

To generate the total electricity output, the Project will need to include multiple reactor units. The number of units needed is based on how much electricity one unit can make and an overall limit on how many units can fit on the Bruce Power site. The number of units also impacts the construction materials needed, various building sizes, the number of workers to be employed, and other considerations for Project planning.

Parameter	MONARK	AP1000	EPR	BWRX-300	ABWR	Bounding Value in PPE
Number of Reactor Units	4	4	3	8	3	8

Maximum: 8 Units

Bounding Reactor: BWRX-300

NET ELECTRICAL POWER

The amount of electricity produced by the Project is an important parameter in the PPE, since the Project must apply for a licence based on the maximum power that can be produced. Total net electrical power is the amount of electricity the Project is able to send to the electrical grid.

Parameter	MONARK	AP1000	EPR	BWRX-300	ABWR	Bounding Value in PPE
Total Net Electrical Power (MWe)	3,660	4,800	4,800	2,400	4,050	4,800

Maximum: 4,800 MWe

Bounding Reactors: AP1000, EPR



NUMBER OF STANDBY GENERATORS FOR THE PROJECT

As part of the safety systems of the nuclear facilities, standby generators are part of each design. Standby generators provide electricity in the event that the normal supply of electrical power is lost. The standby generators ensure the nuclear reactor can be safely cooled, even in the unlikely event that the normal power supply is lost. The maximum number of standby generators is important as they generate air and noise emissions, which are assessed in the Bruce C Impact Statement.

Maximum: 21

Bounding Reactor: EPR

PERMANENT TOTAL AREA

The Project will need enough space for reactor buildings, supporting facilities, storage areas, offices, parking lots, and other facilities. This parameter is for the area that will be required permanently for the Project. The space needed for these elements is important to know, so that a large enough area can be selected and assessed in the Bruce C Impact Statement.

Maximum: 657,800 m²

Bounding Reactor: ABWR

HEIGHT

The tallest part of any structure proposed for the Project is the maximum height that needs to be considered for calculations or modeling in the Bruce C Impact Statement. This is measured from the leveled ground to the highest point. This is important when assessing impacts to birds for example.

Maximum: 75 m

Bounding Reactor: AP1000 & ABWR

EXCAVATION DEPTH

Parts of the nuclear reactors and supporting facilities will be built below ground. The deepest part of the facility is measured from the leveled ground. The deepest building is important for planning, selecting a building site, and understanding impacts on groundwater for example.

Maximum: 38 m

Bounding Reactor: BWRX-300

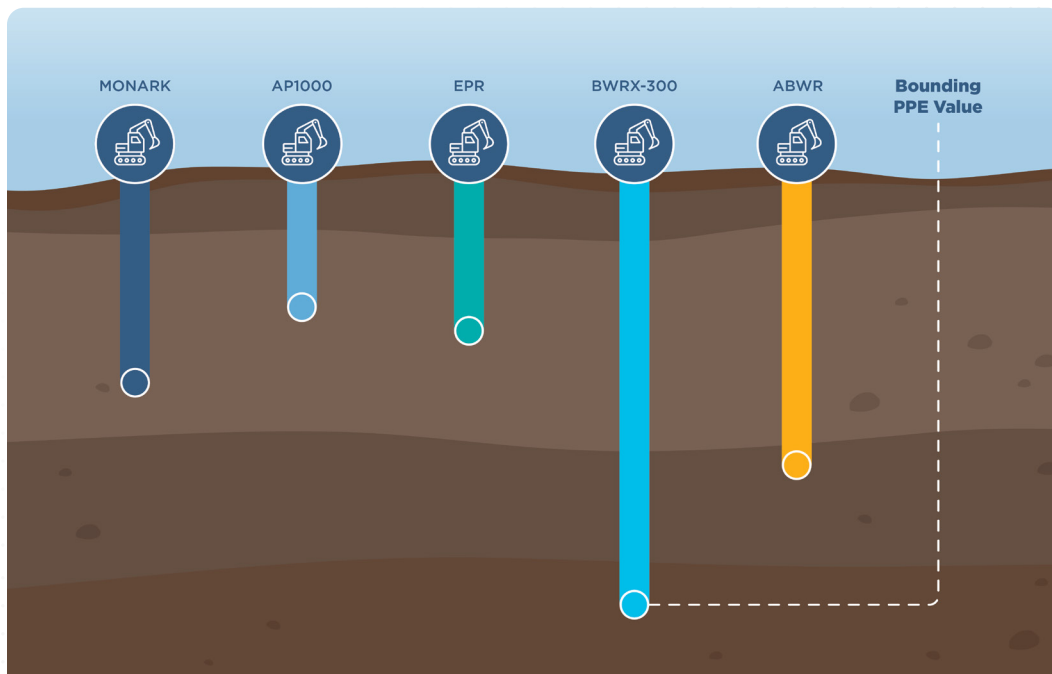


Figure is for illustrative purposes, only to show the maximum embedment depth for each reactor technology relative to each other.

Effects of the Project

The Project is looking to add new power generation to the Bruce Power site, which could affect the human and natural environment. A key step in the Impact Assessment process is the identification of potential effects, which are cause and effect relationships that describe how a project may produce an effect to the human or natural environment.

Examples could be, construction noise (cause) can impact wildlife and wildlife habitat (effect), or a large construction workforce (cause) can affect community wellbeing through increased housing demand that affects housing affordability (effect). Potential effects like these are assessed in the Impact Statement that is prepared by the proponent (Bruce Power) as part of the Impact Assessment.

Potential effects from the Project could be positive, adverse or neutral. When a potential adverse effect is identified, mitigation measures are identified for how the potential effect could be minimized or avoided. Many of these potential effects are further limited by the laws or regulations of Ontario or Canada, so the Bruce C Impact Statement and Licence to Prepare Site application must demonstrate that the Project is able to properly protect the human and natural environment from these potential effects.

The PPE forms a key aspect in defining the Project components (e.g., permanent total area) and activities (e.g., excavation depth and number of construction workers). The bounding parameters of the PPE will inform the identification of potential effects from the Project on environmental, health, social or economic

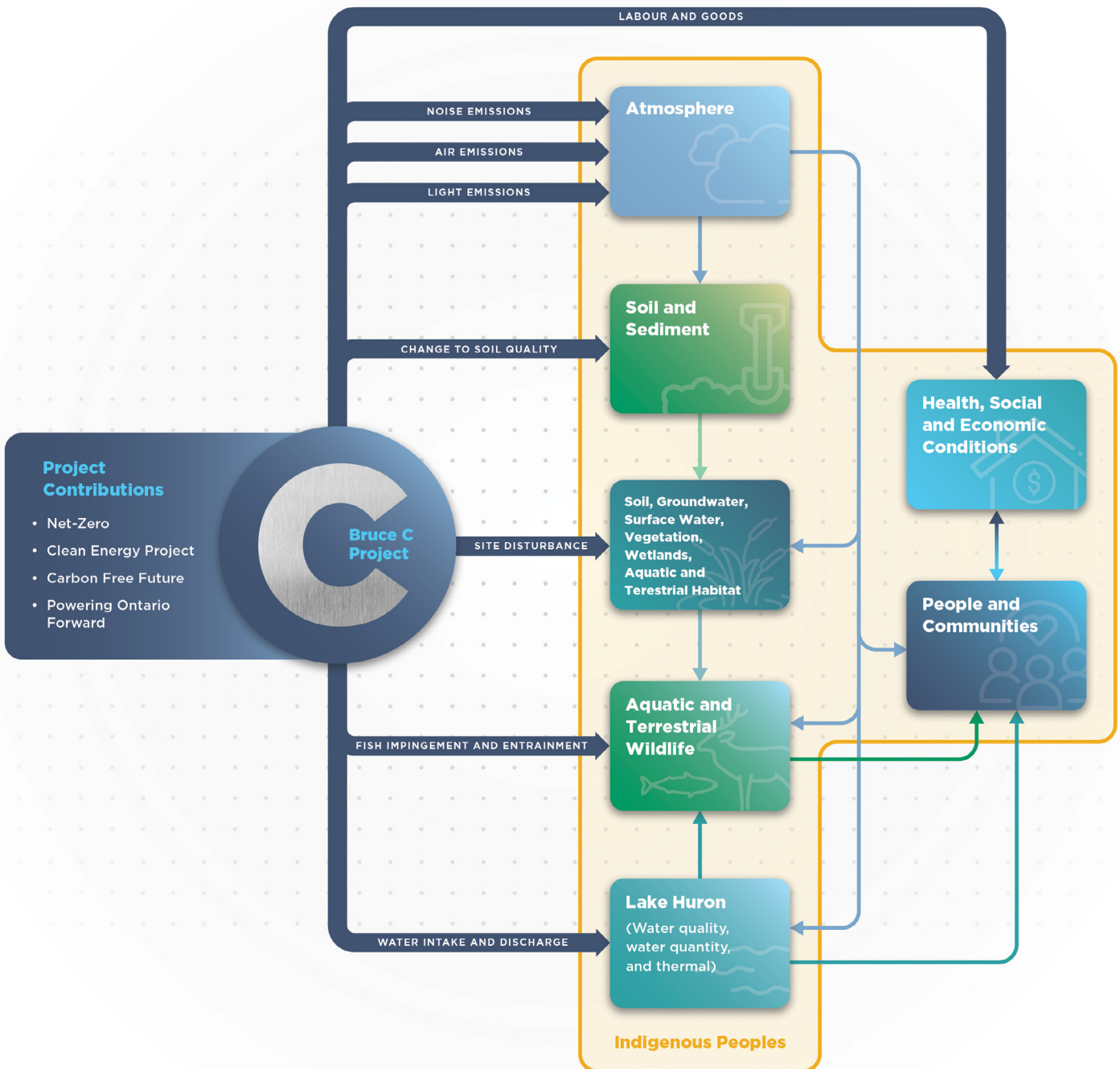
components, as well as impacts on Indigenous Nations and Communities. The Impact Statement will provide detailed information on the potential effects of the Project and describe the mitigation and enhancement measures that are planned to minimize or avoid adverse effects, and enhance positive effects.

Information about the site environment is also used to inform the existing conditions of the human and natural environment and to support assessments such as how the environment could potentially affect the Project (e.g., severe and/or extreme weather conditions). These site characteristics and how they were considered in the assessment will be documented in the Bruce C Impact Statement.

Examples of Site Characteristics Used in the Bruce C Impact Statement

- Rainfall/Precipitation
- Earthquake
- Water Levels and Temperatures
- Soil Properties
- Tornado
- Wind Speed and Direction
- Air Properties
- Site Boundaries
- Lifestyle Characteristics of Surrounding Communities

The below figure is a high-level visual representation depicting interactions between the Project and environmental, health, social and economic components, as well as Indigenous Nations and Communities. This figure shows how potential effects from the Project on one component can affect another component. For example, changes to surface water quality due to the Project can affect fish species which can then affect Indigenous Nations and Communities.



Conclusion

Bruce Power is evaluating the feasibility of expanding its nuclear fleet, to create an option for future electricity planning. The Bruce C Project Impact Assessment is taking a PPE approach, meaning that multiple reactor technologies will be evaluated to determine the potential positive and adverse effects of the Project, without deciding on a specific reactor design. Information on the use of the PPE was provided in the Bruce C IPD, and in Bruce Power's Response to the Summary of Issues. This document was prepared to fulfill the requirements of Section 3.4.1 of the Bruce C TISG to facilitate meaningful engagement with Indigenous Nations and Communities and the public on the use of the PPE.



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177 Tie Road, Tiverton, Ontario, Canada N0G2T0 | 519-361-7777
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