

Natural Resources Canada – Nuclear Energy Division**Proposal B****Financing models for nuclear power plants****Objective:**

The objective is to provide relevant insights with respect to the various Nuclear Power Plant (NPP) financing model options that have been used worldwide, and that could be considered in Canada to enhance nuclear development.

Research question:

What are the current NPP projects under construction across the world? What are the lessons learned? What are the nuclear power new build programs being developed by national governments in order to promote investments in new nuclear power capacity? Which financing models and approaches are being used? Which models could be applied in Canada?

Background:

Nuclear energy is increasingly seen as a key resource to enable Canada's transition towards a net-zero electricity grid by 2035 and a net-zero economy by 2050. A nuclear power plant as an investment is fundamentally no different from that of any large infrastructure project: it is characterized by high upfront capital costs and a long construction period, followed by a lengthy payback period. However, there are several features specific to nuclear projects that present unique considerations for investors, such as technical complexity, political and regulatory risk, etc. These factors increase the risk of the overall project, making it less bankable. One of the goals of governments wanting to develop nuclear projects is to identify these risks and create financing schemes that optimize risk allocation to enhance nuclear power plant investment.

Description of the research project:

For this project, the student will gather information about the nuclear power plants being built in the world and how they are financed. The student will also research if the governments in these countries have specific programs to deliver nuclear power projects, and if such a program exists, the student will describe and outline how the program contributes to reducing overall nuclear power plant delivery risks. Finally, the student will synthesize all the information gathered and propose which options could be considered in Canada.

Supervisor

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