Chapter 2

Problem Statement

2.1. Identification of the Problem

From the table 1.1 and 1.3, it is evident in the near future major portion of the electricity production of Sri Lanka will be from fossil fuels. The fossil fuels are limited resources and with the increased consumption, the cost will be increased leading to utmost competition and possibly a risk of extinction. To maintain continuous production of electricity to suite the present and future increased demand, the electricity production is needed to be diversified to possible several options which are more sustainable.

On the other hand burning of fossil fuel causes environmental pollution which has severe impacts on existence of life. Therefore it is appropriate to consider the cleaner technologies for electricity generation.

The problem is what options available for Sri Lanka to produce electricity and the extent of their suitability with the economical, social, environmental and technological compliances.

2.2. Objective of the Study

This project addresses the possibility of generating electricity using nuclear power in Sri Lanka in the near future, probably by the year 2020. The detailed background study, initial economic and social feasibility study, basic technological study, safety and environmental study will be covered in this project.

The outcome of this project will provide single source of required information for energy planners, policy makers and normal public for considering whether the nuclear energy is a viable option for Sri Lanka.
2.3. **Importance of the Study**

The study of the possibility of electricity production using nuclear technology is important due to following reasons.

- Due to the advancement of nuclear technology, the available fuels for nuclear energy production seems to be unlimited which will be further discussed in subsequent chapters.

- Technological advancement make this technology safer, hence this is widely adopted all over the world. New countries like Bangladesh, Indonesia, Thailand and Malaysia have taken steps to implement nuclear power plant projects. However possibility of major accidents and their consequences are still a concern.

- This is a clean technology. The pollutant emissions can be considered as negligible. However initial construction, nuclear material processing, nuclear fuel production have impacts on environment.

- Fuel cost contribution to electricity cost is very small and the initial construction cost is reducing due to new advance methods of constructions.

- At the moment Sri Lanka is having peaceful background which is necessary for this kind of activities.

- Problem of nuclear waste management will be a major factor.

- Past studies reveal that Sri Lanka is having Thorium resource which is a possible option as a nuclear fuel.