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PI	Pacific Islands

1.0 Introduction

The aim of this report is to investigate the existing power generation technologies used in Samoa and to compare its capabilities, limitations, impacts and possible use towards the growing energy demand.

The demand for energy in Samoa has been growing at the rate of making Samoa very reliant on fossil fuels – specifically petroleum. The highly fluctuated price of petroleum not only makes Samoa causing great concerns for in terms of dependency thus hereby

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2.1 Background – Energy in the Pacific

For 150 years ago, the Pacific Islands (PIs) were net exporters of commercial energy (energy traded in the cash economy) in the forms of whale oil and coconut oil. By the 1950s, PIs were importers on a modest scale of coal and smaller amounts of petroleum ^[1].

By the late 1970s to early 1980s, with the exceptions of Papua New Guinea and Fiji, the region has recorded a dependent upon oil imports to an extent unmatched elsewhere in the world with a 96% ^[2] of primary commercial energy consumption consisting of refined petroleum products (Figure 1.1).

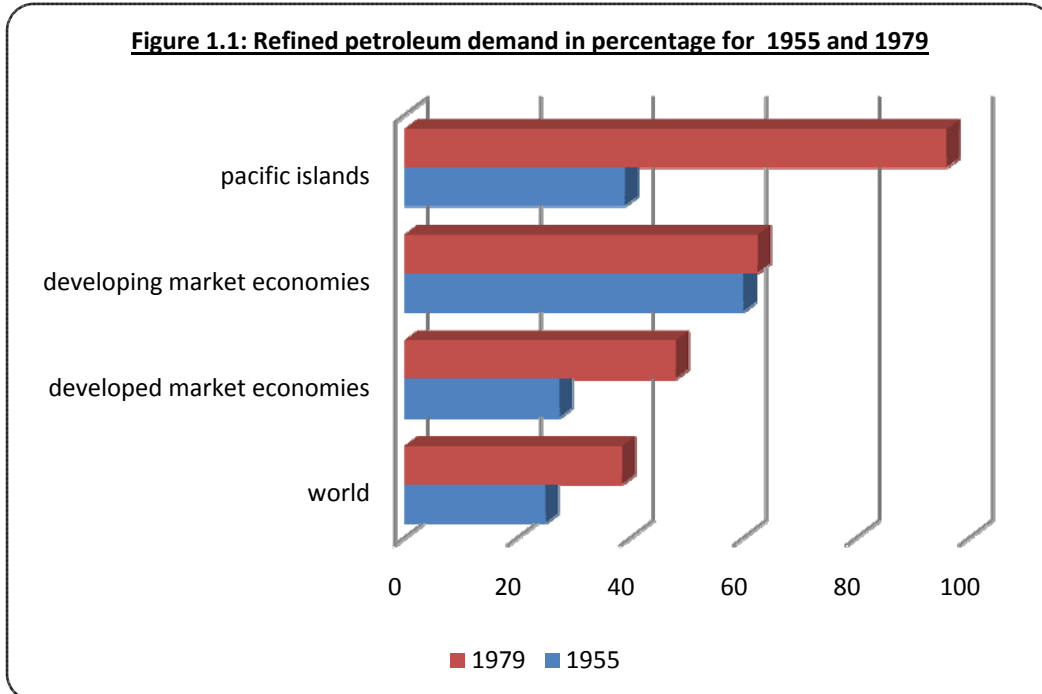


Figure 1.1 illustrates that 96% of primary commercial energy consumption by PIs consists of refined petroleum products. This is due to:

- the change of the choice of the type of energy (from biomass to refined petroleum)
- the increase energy demand due to more commercial activities and growth

2.2 Background – Energy in Samoa

Energy is a critical element behind the Samoa’s strategy for economic growth and social development. In the 1990’s, Samoa went through a rapid transformation in its energy consumption pattern from heavy use of traditional indigenous biomass toward a more commercial energy supply ^[3].

Table 2.1

Type of Energy	Sector	1981	2000	2007
Biomass	Commercial	41	18.1	2.1
	Residential		35.5	34.5
Petroleum	Electricity Sector	6.8	12.3	16
	Transport	14.6	26.5	47.3
	Commercial	1.0	16.5	8.5
	Residential	2.1	1.1	1.9
Electricity	Hydropower	0.6	3.2	3.6
Others	PV		0	0.04
Total		66.22	113.20	113.94

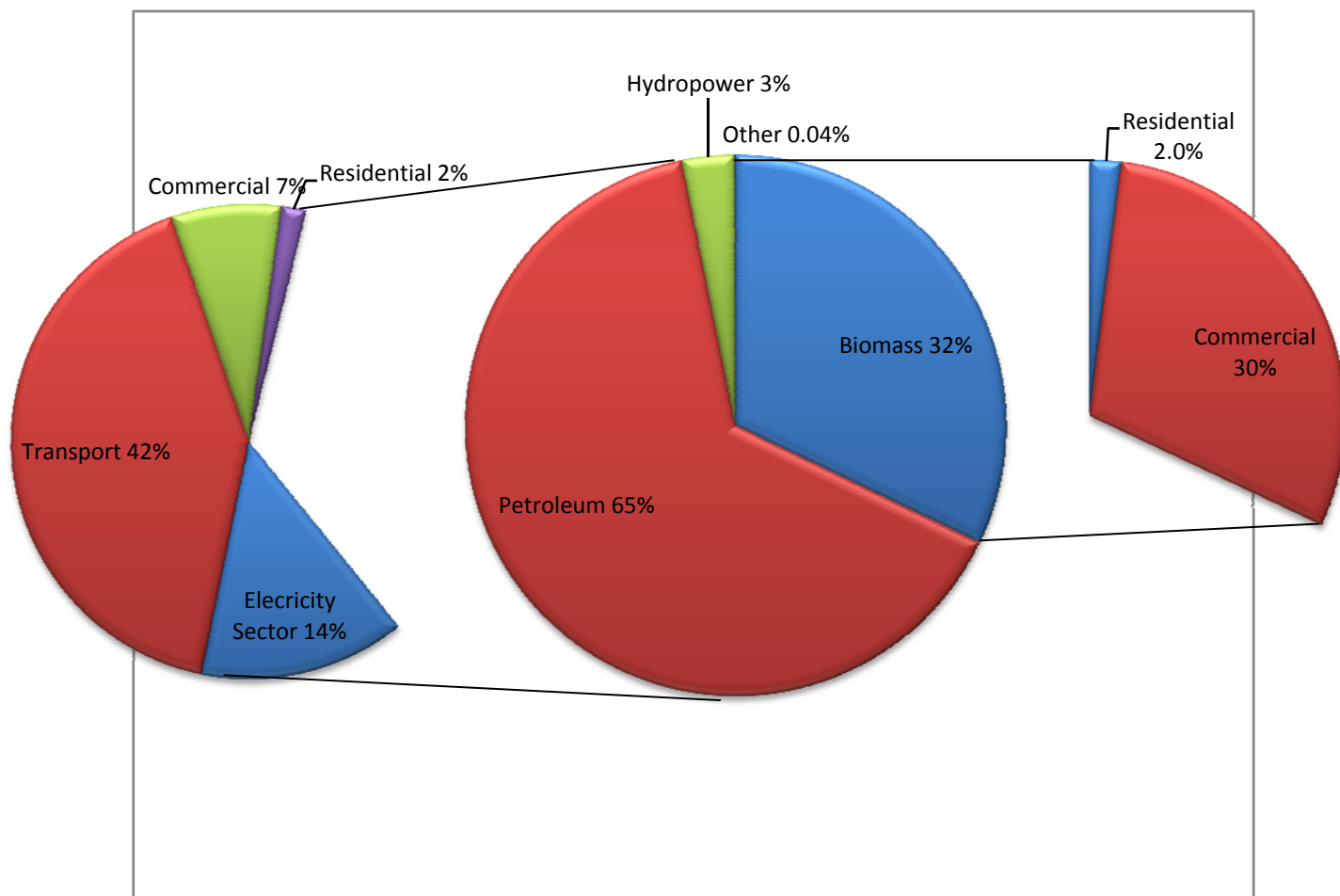
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This shift of energy source from biomass towards imported petroleum, diesel generated electricity and hydropower-generated electricity has made Samoa heavily reliant on imported energy; thus resulting in power generation accounting for 28% ^[4] of the imported fossil fuels.

Biomass accounts for about 48% of the total primary energy supply in Samoa, with petroleum products at 39%. Electricity consumption from diesel and hydro accounts for about 13% of usage. Biomass, primarily from fuel wood and coconut residues, is the dominant cooking fuel.

Table 1.1: Primary Energy Supply of Energy to Pacific Countries 1981 [2]

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8.0 References

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