This Report comprises a submission for examination purpose by the students of the M.Sc. (Town and Country Planning) Degree Course 1981/82, in partial fulfillment of the academic requirements of the Course.

The production of several copies of the Report has been promoted by the Department of Town and Country Planning of the University of Moratuwa. Its costs have been met partly by the students themselves, and also supplemented by sponsorship from a well-wisher and Messers CEYTRADE Ltd. who is collaborating in Solar lighting research with this University.

Their gesture is acknowledged with much appreciation.

PREFACE

This document contains the main findings and conclusions of a Project Exercise designed with a view to formulating a National Energy Plan. The project was commissioned by the Department of Town & Country Planning, University of Moratuwa, Sri Lanka, as an exercise on National Planning for students following the M.Sc. degree course in Town and Country Planning in the academic year 1981/82.

Twelve students participated in this project. They met in a group and with the guidance of the Professor of Town & Country Planning and the Project Tutor, identified the nature & scope of the problem in the Energy Sector and the objectives related to the project.

The project was carried out in one academic term of eleven weeks (21st April - 7th July 1981) wherein two days per week (or a total of about 1800 man hours) were spent by the entire group.

The Report of the project is in two volumes. Volume one, which is in this document, consists of the Group Report prepared by an Editorial Body, appointed by the group. Volume Two consists of the Technical Annexures produced by the individual students who were assigned specific areas for in-depth study.

The following participated in this Project.

Name	Discipline
J.H. de. Mel	Sociology
U.A.Weerakkody	Statistics
G.Tantirigama	Economics & Demography
N.A.L.Waidyasekara (Mrs.)	Business Administration &Statistics.
J.B.Sivapragasam (Mrs)	Architecture & Urban Development
S.Diunugala (Miss)	Architecture
[illegible]	Social Law
D.L.Pheonix	Economics & Public Administration
E.F.Perera	Urban Development
[illegible]	Law
S.A.D.Deville	Public Administration
A.S. Ranasinghe	History

ACKNOWLEDGEMENT

The completion of this work within one academic term was possible owing to the generous help we recieved from so many individuals and institutions. We regret that it is not possible to mention them all by name, on account of obvious reasons.

We offer our heartfelt thanks and gratitude to prof. M.U.J.G.Mendis the Head of the Department of Town & Country Planning, University of Moratuwa, Sri Lanka, and Mr. A.L.S.Perera, Lecturer for the expert direction and invaluable guidance provided to us, sacrificing their valuable time even during their leisure hours. Mention should be made of Miss S.Somasundaram, Lecturer and Mr. K.D.Fernando, Lecturer for their encouragement during this proj excercise.

Among the individuals who contributed to our fund of information immens ly are Mr. G.B.H.Fernando, Assistant Director, Ministry of Finance & Planni Mr. Edwin Wanasinghe, Ceylon Petroleum Corporation, Dr. S.Weeraratne, and Mr. H.V.Jayatillake and Mr. Lal Silva of the NERD, Mr. Anura Weeratne of Ministry of Fisheries, Dr. A.S. Mowjood and Dr. D.N.Gunasekera of the CISIR, Dr. K.Vivekanandan of the Forest Department who deserve special mention.

We also wish to thank the Secretary, Ministry of Industries, Commissioner, Department of Local Government, the Chairman, and the staff of the CEB, the Chairman and the staff of the CPC, the Chairman of the SLGTB, Head of the Department of Mechanical Engineering and the staff, University of Moratuwa, Sri Lanka, for the corporation extended to us. We are also helped by the staf C.C.R, NREL , CISIR, N.S.C, IDB, Atomic Energy Authority, URB, Livestock Board, ARTI, the Central Bank and the Library staff, Peoples Bank.

In conclusion we shall offer our sincere thanks to the rest of our group for preparing, in time as sheduled their individual annexures which were the sources of information for this volume I.

T.H.Pemaratne.
M.A.L.Waidyasekera (Mrs.)
G.Wantirigama.

EDITORIAL BOARD
(Appointed by the group.)

July 1981.

List of Abbreviations.

AEA -Atomic Energy authority.

ADB -- Asian Development Bank.

Amd. -Amendments-

ARTI -- Agricultural Research and Training Institute.

CEB - Ceylon Electricity Board.

CF. --Consolidated fund.

CGR. - Ceylon Government Railway.

Col.Gas.Co.- Colombo Gas Company.

CISIR- Ceylon Institute for Scientific Industry and Research.

CPC - Ceylon Petroleum Corporation.

COOP. Corporation.

CRREMS.- Commonwealth Regional Renewable Energy Resource Information Service.

cu.ft. -cubic feet.

ENDINET-Energy for Rural Development Information Network.

FD -Forest Department.

Gwh . - Giga watt hour(s).

IBRD --.International Bank for Reconstruction and Development.

IDB- Industrial Development Board.

Kcal.- Kilo calory(s)

Kg. -Kilo gram

Kwh . - Kilo Watt Hour(s)

Leg.Enac.- Legislative enactments.

MDB. = Mahaweli Development Board.

Mil/ mn.-. - Million.

Met.Ten.- Metric tons.

Mwh. - Mega watt Hour(s)

NADSA- - National agricultural development & Settlemen. Authority.

NARA = National aquatic Resources Agency.

NERD.-National engineering research and Development Institute.

NREBA - National Resources Energy & Science authority.

NSC. - National science Council.

Ord. Ordnance.

SEC. - Social Economic Energy Conversion.

REC. - Rural Energy Centre.

RERIS.- Renewable Energy Resources Information Service.

SLAAS.- Sri Lanka association for Advancement of Science.

SLCTB.-Sri Lanka Central Transport Board.

SLSC. - Sri Lanka Sugar Corporation.

'000.t.o.e. -1000 ton oil equivalence.

UDA. -Urban Development Authority.

UNEP.- United Nations Energy Programme.

USAID.- United States Agency for International Development.

Vol.- Volume.

WB.- World Bank.

WRB.- World Resources Board.

SUMMARY

Energy is of strategic value for the maintainance of life itself in settlements - both urban and rural. Presently, Sri Lanka is heavily reliant on Electricity, Petrolum , and Woodfuel for the various activities requiring energy. However, these commodities are becoming expensive and scarce and crisis situations have arisen threatening the economic fabric in settlements.

It is therefore timely to take stock and to be prepared. The present situations indicates that energy shortages will prevail in the future.

The future energy sector will require to develop as many of the indigeneous sources, particularly of the renewable types.. Sri Lanka has large potential of solar, wind, and bio-mass sources to develop. In terms of hydro-power, nearly twice the present power capacity (including those in the Accelerated Mahaweli Programme), has yet to be developed. Further, oil exploration off Colombo and Mannar needs to be carried out. In addition, oil refining capacities in Trincomalee offers much scope.

The goal of all future energy programmes should be to secure adequate, reliable, safe and affordable supplies to all citizens in this country.

It is therefore recommended that a comprehensive National Energy Plan based on the concept of settements be formulated. It is in a Settlement Plan that present needs, future requirement and planned activities can be found. Further it is the settlements which form "region" which can enable regional energy situations to be also determined. It is also settlements which provide the National Perspective.

The Settlement approach to Energy Planning will further enable the various energy commodities to be separately identified by purpose and magnitude.

The formulation of a National Energy Plan should be preceded by the preparation of a "White Paper on Energy". The latter will permit widest participation in discussion and provide an ideal forum for formulating a comprehensive national energy policy.

The components of the National Energy Plan should include forcasts, research and development, investments, inter sectoral linkages, district situations energy source inventories, creation of civic consciousness, conservation and strategies for meeting with an energy crisis situation.

The co-ordination of the Energy sector components must be seen as an urgent necessity. In this connection it is recommended that co ordination at policy level be assigned to a "National Energy Council" under the Hon. Minister for Energy and co-ordination for research be assigned to the Energy Research Center of the University of Moratuwa, Sri Lanka.

NATIONAL ENERGY PLAN

INDEX OF CONTENTS