

REPORT ON THE CONSULTATION WORKSHOP ON THE DEVELOPMENT OF THE TUVALU NATIONAL ENERGY POLICY, FUNAFUTI, 12-14 APRIL 2005

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PIEPSAP Project Report 10

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~ Participating Pacific Islands Countries ~

Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu



Report on the Consultation Workshop on the Development of the Tuvalu National Energy Policy

Funafuti 12 to 14 April 2005

Introduction

The first of the three consultation workshops on the development of the Tuvalu National Energy Policy was carried out in Funafuti from 12 to 14 April 2004. The consultation workshop is part of the Pacific Islands Energy Policy and Strategic Action Planning Project (PIEPSAP) activity in Tuvalu. The Tuvalu Government through the Assistant Secretary in Ministry of Works and Energy requested PIEPSAP to provide assistance to Tuvalu in reviewing their National Energy Policy.

Consultation Workshop

The workshop was organised for the members of the PIEPSAP National Task Force and was officially opened by the Minister for Works and Energy, Hon. Saufatu Soponga. The list of the National Task Force is attached as Annex I. The Minister in his opening address said that his government is viewing the development of the energy sector in Tuvalu as a challenge given that Tuvalu's natural resources are limited and that most of the national energy needs are met from imported fossil fuels whose prices have escalated beyond Tuvalu's absorptive capacity. The challenge is to put in place a national energy policy framework that will help Tuvalu achieve sustainable development to improve the living standard of its people. An abridged version of the Minister's speech is attached as Annex II to this report.



Minister Saufatu Soponga addressing the participants

The workshop was organised to encourage all participants to contribute to the tasks at hand and this was done through small working groups. Discussion points were presented in a logical sequence through a power point presentation. The power point presentation is attached as Annex III. Following this logical sequence the following points were presented and discussed:

- National Vision
- National Strategic Outcome
- Constraints to National Development
- Positive Characteristics of Tuvalu
- National Energy Policy Vision
- National Energy Policy Goal
- Energy Sector Strategic Areas
- Policy Statements



Workshop participants with the Minister Soponga



A Group deliberating on policy issues

Current National Energy Policy

The current National Energy Policy has been in place since 1995. Although the policy was endorsed by Government, it received little support in terms of financial resources and personnel to facilitate its implementation. The Department of Energy has been faced with this dilemma over the past years and they saw the PIEPSAP project as an opportunity to revise the policy framework so as to strengthen its position to support Government national development plan.

Revised National Energy Policy Framework

At the consultation workshop the Task Force agreed that the energy policy framework should have a 'vision' statement. After deliberating of the matter the participants came up with the following 'vision' statement:

"By the year 2020 guided by the principles in the "Te Kakeega II" and the "Malefatunga Declaration", Tuvalu shall attain a prosperous living standard that is fostered through an energy policy framework that promotes the provision of socially, economically, politically and environmentally sustainable energy systems."

As for the 'goal' of the policy framework the Task Force came up with the following statement:

"To improve the well-being of the Tuvalu people by promoting the use of its renewable energy resources and implementing cost-effective, equitable, reliable, accessible, affordable, secure and environmentally sustainable energy systems."

The revised national energy policy framework has seven strategic areas as opposed to the eight under the 1995 policy framework. The PIEPSAP National Task Force in their deliberation agreed to combine the Urban Electricity and the Rural Electricity as one strategic area. The following strategic areas were agreed to by the Task Force:

1. Energy Sector Planning, Research, Co-ordination, and Management
2. The Petroleum Sector
3. The Transport Sector
4. Electricity Sector
5. New and Renewable Sources of Energy
6. Environmental Aspects
7. Energy Conservation and Efficiency

The policy statements for each strategic area were developed. These statements are first cut policy statements and these have been circulated to members of the Task Force for further comment and revision. As highlighted in the TOR the policy statements will require wider circulation amongst the stakeholders and will be finalised during the second consultation workshop which is scheduled on the third week of May. A copy of the revised policy statements is attached as Annex IV.

Conclusion

The consultation workshop was a useful exercise in revising the national energy policy for Tuvalu. It was organised and structured to ensure active participation by all participants and it is encouraging to note the commitment of the participants during the entire workshop duration.

The involvement of the Minister responsible for energy and his Permanent Secretary is a recognition of the commitment Government is placing in having a national energy policy for Tuvalu.

Annex I

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Annex II

Speech by the Minister for Works and Energy

Talofa and I welcome you all this morning to the first consultation workshop on the development of a national energy policy framework for Tuvalu. I am in deed delighted to be invited to be here this morning to open this consultation workshop. I understand present here this morning are representatives from all sectors of the economy. In particular, I would like to welcome representatives from the private sector and non-governmental organisations. Your inputs into the development of the energy policy framework will be highly appreciated.

I would also like to extend a warm welcome to the facilitator of the workshop, Mr Anare Matakiviti, of the South Pacific Applied Geoscience Commission (SOPAC) in Suva.

From the outset I would like to say that this government is well aware of the importance of energy in its socio economic development programmes – be it agriculture, education, tourism, transportation, communication or manufacturing programme, it needs some sort of energy input to facilitate its implementation.

This consultation workshop - and I understand there will be follow up workshops later - is a step towards ensuring that Tuvalu has an energy policy framework that will guide us to plan for affordable, reliable and sustainable energy services for all the people of Tuvalu.

I certainly would like to see the consultation process in this workshop as open and inclusive as possible.

This workshop will allow you as stakeholders to engage and discuss with one another as well as those from Government on new and emerging energy issues. Again, I wish to encourage you to be more participatory in all aspects of decision-making and deliberation during the next four-days.

Your involvement, as key representatives and policy makers, is crucial. I hope that you will look to this workshop with open minds and willingness to think beyond your initial positions. In this way, we can work towards a common goal for a more effective way forward.

Please allow me at this point in time to indicate a number of policy areas where some of the key issues are well outlined. Most of these issues are complex and are inter-related.

In January this year, New Zealand government offered a 2-year long-term training scholarship to the Assistant Energy Planner to pursue studies for a Diploma in Electronic Technology at the Auckland University in New Zealand. Next year, the Department of Energy will also send one of its technical staff to undergo studies for a Diploma in Renewable Energy Technology in Australia. The trainings are useful and would definitely contribute to the future development of our energy technical capacity in the field of renewable energy technology.

At the moment, the Department of Energy is working closely with the technical advisor from the United Nations Industrial Development Organisation (UNIDO) in developing one diesel/solar hybrid power system each for Nukulaelae and Nanumea. These two outer islands will benefit from an improved energy system that provides them with 24 hours of electricity supply similar to that in Funafuti. The generation of economic activities in Nukulaelae and Nanumea especially, in the Agriculture and Fisheries Sectors will be enhanced with this improved power supply system.

Before the end of this year the Department of Energy aims to handover the operation and management of the national solar programs to the Tuvalu Electricity Corporation (TEC). In fact, one of the future roles of TEC will be the promotion and development of renewable energy systems in Tuvalu.

We need to create our energy policy framework as a living document but not as an idle text sitting on the bookshelf. In this respect the need to create an Energy Act is vital and I understand this is one of the other two activities that the Pacific Islands Energy Policy and Strategic Action Planning programme (PIEPSAP) at SOPAC will also be providing assistance in. The other is the development of the Tuvalu Renewable Energy Master Plan.

I have already mentioned that energy is fundamentally an important element in our lives. We must continue to pay close attention to the security of our energy supply. Our remoteness from supply sources will need to be taken into account to ensure that we have sufficient supply of fuel products all the time.

Another important policy consideration is the impact of using fossil fuels on the environment. There is global consensus that CO₂ concentrations in the atmosphere have reached a level that is threatening the very natural life supporting systems that we are so dependent upon. The changes in climatic conditions experienced globally are affecting small islands nations such as Tuvalu.

The growing evidence of climate change is forcing attention on carbon emissions and their reduction. In terms of policy matters, these challenges all point to the same direction: “towards a reduction in the carbon intensity of energy production and greater efficiency in its use”.

Public policy about energy had been and will continue to be the focus, of the economic and environmental well-being of the nation. Controlling greenhouse gases such as CO₂ requires policy action in a number of areas.

Well-designed policies can actually stimulate innovation and improve productivity particularly in the field of energy efficiency. But climate change is an issue of concern as much as of economic development. It is a problem caused by the industrialised countries whose effects will disproportionately fall on small countries like Tuvalu.

That is why Tuvalu supports the Kyoto Protocol which came into force in February this year. Today, we are working closely with other countries to establish both a common goal for change and a firm commitment to reduce carbon emissions worldwide.

Only few local companies have already taken actions in response to the policies that we have put in place to encourage more efficient use of energy. But others have not. Within national economy and as pressure is on national resources and prices increase, I believe that no business can now ignore this challenge. For Tuvalu, my ambition is that the local businesses must become better-off in their energy efficiency performance, in the same way that they must become better-off in their productivity, skills and development performance.

We also have small range of energy efficiency programmes. These go with the grain of all our energy policy objectives. They can simultaneously help us to

tackle climate change and fuel poverty and to enhance security and promote competitiveness.

We should now plan to launch the Energy Efficiency Committee that will put in place an obligation on energy suppliers to offer assistance and advice to domestic customers that would help them reduce their energy consumption. The Committee will run until 2010 and by then we expect to have generated ongoing annual energy savings for consumers as well as reasonable annual reductions in carbon emissions.

But we need to consider whether there is more that we can and should do. Should we for example set a 2010 target as a recommendation and how could a step change in energy efficiency be achieved?

I would like you to consider how the transportation and electricity sectors can best contribute to a low carbon future. The Department of Energy has set out a strategy to improve vehicles and generator efficiency which is a road map towards low carbon fuels. However, we must be mindful of what can be achieved in the near term, and this, is going to focus primarily on improved vehicle and engine generation efficiency.

I believe that in both energy efficiency and the development of renewable energy technology there are major economic opportunities for business. But climate change policy must also be taken into account especially its impacts on business. This must therefore be carefully monitored and managed. I know that, for business investment, certainty in the long-term policy framework is very important. I therefore wish to deliver a challenge today to the business community in Tuvalu: to please join us in putting in place a long-term framework to meet our energy goals in the most cost-effective manner.

Those of us involved in the energy policy workshop today will probably be encountering more rough waves. As producers and consumers riding on the same boat, let us further polish our navigational skills together and successfully tide over the rough waves to continue our smooth journey towards the goal of greater welfare for our nation.

I will just add a final plea - please be open-minded, be innovative, think beyond the needs and objectives of your particular sectors and employers. We all have an opportunity to influence the Tuvalu energy policy framework for the next ten years. It is important that we get it right and that we get it right at this second time. Please be forthcoming with your views and ideas.

I wish to conclude my Opening Address, looking forward to your interesting and productive discussions over the course of the next four days. Ladies and Gentlemen I hereby declare the Tuvalu National Energy Policy workshop open

Thank you very much.

Tuvalu Mo Te Atua.

Annex III
NATIONAL ENERGY POLICY
FRAMEWORK

FIRST CONSULTATION WORKSHOP
FUNAFUTI

12 – 15 APRIL 2005

PIEPSAP

PACIFIC ISLANDS ENERGY POLICY
AND STRATEGIC ACTION PLANING

MINISTRY OF FOREIGN AFFAIRS OF DENMARK
UDENRIGSMINISTERIET



National Vision (Te Kakeega II)

- ***“By 2015, guided by strong spiritual values enshrined in its motto – ‘Tuvalu mote Atua’ – we will have achieved a healthy, educated, peaceful and prosperous Tuvalu”.***

National Strategic Outcomes



1. **Good Governance**
2. **Macroeconomic Growth and Stability**
3. **Social Development: Health, Welfare, Youth, Gender, Housing and Hardship and Poverty Alleviation**
4. **Outer Island and Falekaupule Development**
5. **Employment and Private Sector Development**
6. **Human Resource Development**
7. **Natural Resources: Agriculture, Fisheries, Tourism and Environmental Management**
8. **Support Services and Utilities**

Constraints to Development

1. Limited natural resource base;
2. Widely scattered and sparsely populated island geography;
3. Small domestic market with little potential for economies of scale;
4. Access to major international markets is expensive;
5. Increasingly competitive international markets for seamen, tourism and investment;
6. Social and cultural system with limited understanding and experience of business concepts and practices;
7. Limited economic opportunity in the domestic economy;
8. Land and capital market development constrained by small size, and social values and traditions;
9. Low absorptive capacity for major investments.

Positive Characteristics

- The Tuvalu Trust Fund (TTF) and the Falekaupule Trust Fund (FTF); with sound investment management and a stable and growing world economy these should provide a solid funding base for government policies and for outer island development respectively;
- An extensive Exclusive Economic Zone (EEZ) which generates substantial fish licence revenues;
- A strong market presence for international seamen; and
- A strong traditional culture which promotes social stability and family welfare.

Energy Policy - Vision



- ??????
- What is the Timeline - 5, 10, 15 years??
- Is the vision in line with the National sentiments of the “Te Kakeega II?”

Energy Policy Vision (Cont...)



- **Important Points to remember:**
 - **Priority areas – what energy sub-sectors ?**
 - **Resources availability – financial? Human?**
 - **Technologies – (transportation/home appliances) - efficient, improvement;**
 - **Renewable energy resources;**
 - **Imported energy resources;**
 - **Environmental issues**

Energy Policy Vision (Cont...)

- Economic aspects of energy pricing
- Health issues
- Geography of the country – outer islands, resources availability, low lying coral atolls
- Access – transportation, shipping – how regular?
- Sustainable development
- Poverty reduction
- Political will

Energy Policy

Goal

To increase the welfare of the Tuvalu people by [promoting the use of its renewable energy resources and implementing **cost-effective, equitable, and sustainable** energy policies.

Goal (Cont...)



- Does the goal capture the sentiments of the “Te Kakeega II?”
-

Goal (Cont...)



- **Priority areas – what energy sub-sectors ?**
- **Resources availability – financial? Human?**
- **Technologies – (transportation/home appliances) - efficient, improvement;**
- **Renewable energy resources;**
- **Imported energy resources;**
- **Environmental issues**

Goal (Cont...)



- **Economic aspects of energy pricing**
- **Health issues**
- **Geography of the country – outer islands, resources availability, low lying coral atolls**
- **Access – transportation, shipping – how regular?**
- **Sustainable development**
- **Poverty reduction**
- **Political will**

Policy Objectives (Cont...)



“Dependable, efficient, and affordable nationwide energy systems capable of supporting the needs of the people”

“Increased energy self-sufficiency where the ratio of indigenous to imported energy use is increased”

“Greater energy security in the face of threats to Tuvalu's energy supplies and systems”

“Environmentally sustainable energy production and use.”

Policy Objectives

*“the pursuit of secure and **competitively priced means of meeting our needs** for affordable energy services, subject to the achievement of environmentally sustainable energy systems.”*

“the pursuit of affordable, reliable and sustainable energy systems”

“to ensure that the energy sector provides affordable, reliable and sustainable energy systems to promote social and economic development”

“to ensure a reliable, long-term supply of energy in sufficient quantities and at affordable prices, from processes that are compatible with prudent environmental standards”

Strategic Areas

- 1. Energy Sector Planning, Research, Co-ordination, and Management**
- 2. The Petroleum Sector**
- 3. The Transport Sector**
- 4. Electricity Sector**
- 5. New and Renewable Sources of Energy**
- 6. Environmental Aspects**
- 7. Energy Conservation and Efficiency**

Energy Sector Planning, Research Co-ordination, and Management

To establish and maintain an energy policy and planning office (the Energy Office) within the Government of Tuvalu with sufficient staffing, expertise and resources to provide the country with the capacity to plan and manage the national energy sector with a minimum of dependence on outside support.

To establish and maintain formal links between the Energy Office and Government agencies involved in the energy sector, including the Tuvalu Electricity Corporation (TEC) and the Tuvalu Solar Electric Co-operative Society (TSECS), to ensure effective communication and co-ordination of energy policy, programmes and projects.

In the longer term, to consolidate, under one Ministry, all energy sector planning, co-ordination and management by offices, agencies, firms and corporate boards involved in the sector, so as to rationalise decision making and ensure more reliable and effective energy sector planning, management and oversight.

To convene, as required, an inter-Ministry consultative committee to discuss and provide advice and recommendations to the Energy Office on major energy sector issues and initiatives, and to ensure effective co-ordination of energy related activities across Ministries.

The Petroleum Sector



To secure a reliable supply of petroleum products at minimum landed cost and conforming to agreed product standards and specifications.

To minimise dependence on petroleum products by actively encouraging fuel conservation and efficient end-use, and by utilising cost-effective alternatives.

To ensure that petroleum storage and handling facilities are located to satisfy Government, consumer and supplier requirements in the most optimal manner and to ensure that the facilities have sufficient holding capacity to satisfy ongoing consumer demand under normal re-supply schedules.

To ensure a reliable, cost efficient supply of petroleum products to rural districts to meet the demand of their developing economies.

To ensure the safe handling and storage of petroleum products, and to minimise the environmental impact of petroleum handling, storage and waste disposal.

The Transport Sector



To maximise fuel conservation and efficiency in the transport sector.

To minimise the detrimental impact of petroleum product consumption in the transport sector on the land, air and marine environment.

The Urban Electricity Sector

To ensure the maintenance of an efficient, financially independent and commercially operated power utility, the Tuvalu Electricity Corporation (TEC), that is able to provide a cost-effective and reliable electricity supply to meet the developing demand for electricity in its areas of service.

To ensure that TEC power system expansions are economically and socially justifiable, and are based on a least cost development strategy that, amongst other options, incorporates demand side management to reduce peak loads and conserve power.

- . To achieve full cost recovery from consumers, Government and private, for the provision of electricity and related services. **Where subsidies for electricity consumption are considered appropriate by the Government, such subsidies will be given directly to the end-user, not the electricity supplier, and will be identified in the Government budget as a subsidy to that end-user.**
- . To minimise the detrimental impact of the power generation and distribution system on the environment and the community.

The Rural Electricity Sector



To contribute to the economic and social development of rural Tuvalu through the provision of financially viable, cost-effective and reliable electricity supplies to rural areas.

In line with the rural electrification (RE) planning/co-ordination function of the Energy Office, to formulate, adopt and implement a financially and technically sustainable RE Programme that will complement and operate in close co-ordination with other rural development programmes.

To contribute to the economic and social development of rural Tuvalu through the provision of financially viable, cost-effective and reliable electricity supplies to rural areas.

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The Rural Electricity Sector (Cont...)

In line with the rural electrification (RE) planning/co-ordination function of the Energy Office, to formulate, adopt and implement a financially and technically sustainable RE Programme that will complement and operate in close co-ordination with other rural development programmes.

To ensure that electricity is supplied on a commercially sustainable basis, with tariffs/fees based on full cost recovery from consumers for all recurrent costs and for as much of the capital investment as is possible. Where Government subsidies are justified, they will consist only of capital investment subsidies, they are to be provided for and made explicit in Government budgeting, and they are not to be cross subsidised from other operations of the TSECS or the TEC.

To ensure that the provision of electricity is based on a least cost development strategy utilising technologies that are technically and commercially proven, are able to be adequately supported using local manpower and resources, and are suited to the needs of the user and the characteristics of the site. In situations where connection with the TEC grid proves the least cost option, extension of the grid should be encouraged.

The Rural Electricity Sector (Cont...)



Subject to their commercial sustainability, to ensure that sites for rural electrification systems are selected to maximise the benefit/cost ratio, to maximise system sustainability, and to meet existing economic and social development needs.

To ensure that rural electrification systems are implemented and operated in a manner that minimises detrimental impacts on the environment, particularly ensuring that rechargeable batteries are recycled or disposed of in a manner that will not cause harm to the land, air or marine environment.

Sources of Energy



To ensure Tuvalu's limited biomass energy resource is used efficiently and in an economically and environmentally sustainable manner.

To maximise the contribution of appropriate, proven and cost-effective renewable technologies utilising indigenous energy resources to help meet Tuvalu's energy needs.


Environmental Aspects



To minimise the impact of energy production, distribution and consumption on the Tuvalu environment, and to ensure that energy resources are consumed in an equitable and environmentally sustainable manner.

To ensure the close co-operation and co-ordination of organisations in the energy sector within the framework of the National Environmental Management Strategy.

Energy Conservation and Efficiency



To minimise Tuvalu's energy demand without adversely affecting Tuvalu's economic and social well being, and to maximise the efficiency with which energy is used.

Annex IV

Tuvalu National Energy Policy Framework

VISION

“By the year 2020 guided by the principles in the “Te Kakeega II” and the “Malefatunga Declaration”, Tuvalu shall attain a prosperous living standard that is fostered through an energy policy framework that promotes the provision of socially, economically, politically and environmentally sustainable energy systems.”

GOAL

To improve the well-being of the Tuvalu people by promoting the use of its renewable energy resources and implementing cost-effective, equitable, reliable, accessible, affordable, secure and environmentally sustainable energy systems.

1.0 Energy Sector Planning, Research Co-ordination, and Management

- 1.1 To maintain and strengthen the Department of Energy’s capacity to plan, research and manage the implementation of the national energy policy framework by allocating sufficient level of staffing, expertise and financial resources.
- 1.2 To establish and maintain formal links between the Department of Energy and Government agencies, including public corporations and Kaupule, the Tuvalu Electricity Corporation (TEC), NGOs and the private sector involved in the energy sector, to ensure effective communication and co-ordination of energy policy, programmes and projects.
- 1.3 To consolidate all energy sector planning, co-ordination and management so as to rationalise decision making and ensure more reliable and effective energy sector planning, management and oversight.
- 1.4 To establish and convene, as required, the ECC to discuss and provide advice and recommendations to the Department of Energy on major energy sector issues and initiatives, to ensure effective co-ordination and planning of energy related activities nation wide.

2.0 Petroleum

- 2.1 To ensure a secure and reliable supply of petroleum products at an acceptable landed cost and conforming to agreed product standards and specifications.
- 2.2 To promote the use of cleaner petroleum products.
- 2.3 To reduce dependence on petroleum products by actively encouraging fuel conservation and efficient end-use and by actively searching for, proving and utilising cost-effective alternatives as appropriate.
- 2.4 To ensure that all petroleum storage and handling facilities are built according to “world best practice and standards.”
- 2.5 To ensure that fuel storage facilities on Funafuti have sufficient capacity to hold a minimum contingency reserve of two (2) months national product supply to satisfy ongoing consumer demand under normal re-supply schedules.
- 2.6 To ensure a reliable, cost efficient supply and safe storage of petroleum products to the outer islands to meet the demand of their developing economies.
- 2.7 To minimise the environment impact of petroleum products and risks associated with handling, storage and waste disposal through the development of appropriate regulations for safe and environmentally sound handling and disposal of petroleum waste products.
- 2.8 To ensure that all importers are responsible for collection, storing, transportation and disposal and/or shipping used/waste oil out of Tuvalu
- 2.9 To ensure that proper training and awareness programmes are provided to all stakeholders and the general public on the risks associated with the use of petroleum products.

3.0 Transport

- 3.1 To promote fuel conservation and efficiency in the sea and land transport sector.[Move to Energy Conservation and Efficiency]
- 3.2 To reduce the detrimental impact of petroleum product consumption in the transport sector on the land, air and marine environment.

4.0 Electricity

- 4.1 To ensure the maintenance of an efficient, commercially operated power utility, the Tuvalu Electricity Corporation (TEC) is able to provide a cost-effective and reliable electricity supply to meet the developing demand for electricity in its areas of supply.
- 4.2 To ensure that TEC power system expansions and upgrading are economically and socially justifiable, and are based on a least cost development strategy

that, amongst other options, incorporates demand side management to reduce peak loads and conserve power.

- 4.3 To work towards achieving a full cost recovery tariff from consumers, Government and private, for the provision of electricity and related services. Where subsidies for electricity consumption are considered appropriate by the Government, such subsidies will be given directly to the end-user, not the electricity supplier, and will be identified in the Government budget as a subsidy to that end-user.
- 4.4 To minimise the detrimental impact of the power generation and distribution system on the environment and the community.
- 4.5 To contribute to the economic and social development of rural Tuvalu through the provision of financially viable, cost-effective and reliable electricity supplies to rural areas.
- 4.6 To strengthen and maintain close co-operative links between the TEC and the Department of Rural Development and the Kaupule.
- 4.7 To promote the development and use of Renewable Energy to sustain the provision of electricity throughout Tuvalu through TEC.

5.0 Renewable Energy

- 5.1 To establish and maintain a database for all available RE sources and technologies to foster better planning, use and management of RE sources and technologies.
- 5.2 To ensure Tuvalu's limited biomass and other renewable energy resources are used efficiently and in an economically, environmentally and sustainable manner.
- 5.3 To maximise the contribution of appropriate, proven, affordable and cost-effective renewable technologies utilising indigenous energy resources to help meet Tuvalu's energy needs.
- 5.4 To develop local expertise in the installation, operation, management and maintenance of technically and economically proven renewable energy systems;
- 5.5 To encourage the use of renewable energy as an alternative energy source where technically and economically feasible including but not limited to solar technologies.

- 5.6 To pursue the use of copra bio-fuel as a substitute for diesel fuel in both transportation and electrification systems.
- 5.7 To develop partnerships with potential foreign and local investors, donors and agencies in seeking funding sources for the development of renewable energy programmes in Tuvalu.

6.0 Energy Conservation and Efficiency

- 1. To ensure that Government, commercial and private users are encouraged to use energy conservation and efficiency programmes
- 2. To ensure TEC adopts energy conservation and efficiency measures in its operations including generation, transmission and distribution systems.
- 4. To promote the use of renewable energy as a means to achieve energy efficiency where attainable
- 5. To ensure that service providers such as TEC have a proper recording system in accordance with best practice standard.
- 7. To promote public awareness in conservation and efficiency use
- 8. To promote the use of energy saving measures including the use efficient appliances and equipment

7.0 Environment

- 7.1 To minimise the adverse impact of energy production, distribution and consumption on the Tuvalu environment, and to ensure that energy resources are consumed in an equitable and environmentally sustainable manner.
- 7.2 To ensure the close co-operation and co-ordination of organisations in the energy sector within the framework of the National Environmental Management Strategy.
- 7.3 To promote EIA in all energy sector development.
- 7.4 To promote public awareness programmes on the impact of energy related pollution on the environment.

Annex IV

Tuvalu National Energy Policy Framework

VISION

“By the year 2020 guided by the principles in the “Te Kakeega II” and the “Malefatunga Declaration”, Tuvalu shall attain a prosperous living standard that is fostered through an energy policy framework that promotes the provision of socially, economically, politically and environmentally sustainable energy systems.”

GOAL

To improve the well-being of the Tuvalu people by promoting the use of its renewable energy resources and implementing cost-effective, equitable, reliable, accessible, affordable, secure and environmentally sustainable energy systems.

1.0 Energy Sector Planning, Research Co-ordination, and Management

- 1.1 To maintain and strengthen the Department of Energy’s capacity to plan, research and manage the implementation of the national energy policy framework by allocating sufficient level of staffing, expertise and financial resources.
- 1.2 To establish and maintain formal links between the Department of Energy and Government agencies, including public corporations and Kaupule, the Tuvalu Electricity Corporation (TEC), NGOs and the private sector involved in the energy sector, to ensure effective communication and co-ordination of energy policy, programmes and projects.
- 1.3 To consolidate all energy sector planning, co-ordination and management so as to rationalise decision making and ensure more reliable and effective energy sector planning, management and oversight.
- 1.4 To establish and convene, as required, the ECC to discuss and provide advice and recommendations to the Department of Energy on major energy sector issues and initiatives, to ensure effective co-ordination and planning of energy related activities nation wide.

2.0 Petroleum

- 2.1 To ensure a secure and reliable supply of petroleum products at an acceptable landed cost and conforming to agreed product standards and specifications.
- 2.2 To promote the use of cleaner petroleum products.
- 2.3 To reduce dependence on petroleum products by actively encouraging fuel conservation and efficient end-use and by actively searching for, proving and utilising cost-effective alternatives as appropriate.
- 2.4 To ensure that all petroleum storage and handling facilities are built according to “world best practice and standards.”
- 2.5 To ensure that fuel storage facilities on Funafuti have sufficient capacity to hold a minimum contingency reserve of two (2) months national product supply to satisfy ongoing consumer demand under normal re-supply schedules.
- 2.6 To ensure a reliable, cost efficient supply and safe storage of petroleum products to the outer islands to meet the demand of their developing economies.
- 2.7 To minimise the environment impact of petroleum products and risks associated with handling, storage and waste disposal through the development of appropriate regulations for safe and environmentally sound handling and disposal of petroleum waste products.
- 2.8 To ensure that all importers are responsible for collection, storing, transportation and disposal and/or shipping used/waste oil out of Tuvalu
- 2.9 To ensure that proper training and awareness programmes are provided to all stakeholders and the general public on the risks associated with the use of petroleum products.

3.0 Transport

- 3.1 To promote fuel conservation and efficiency in the sea and land transport sector.[Move to Energy Conservation and Efficiency]
- 3.2 To reduce the detrimental impact of petroleum product consumption in the transport sector on the land, air and marine environment.

4.0 Electricity

- 4.1 To ensure the maintenance of an efficient, commercially operated power utility, the Tuvalu Electricity Corporation (TEC) is able to provide a cost-effective and reliable electricity supply to meet the developing demand for electricity in its areas of supply.
- 4.2 To ensure that TEC power system expansions and upgrading are economically and socially justifiable, and are based on a least cost development strategy

that, amongst other options, incorporates demand side management to reduce peak loads and conserve power.

- 4.3 To work towards achieving a full cost recovery tariff from consumers, Government and private, for the provision of electricity and related services. Where subsidies for electricity consumption are considered appropriate by the Government, such subsidies will be given directly to the end-user, not the electricity supplier, and will be identified in the Government budget as a subsidy to that end-user.
- 4.4 To minimise the detrimental impact of the power generation and distribution system on the environment and the community.
- 4.5 To contribute to the economic and social development of rural Tuvalu through the provision of financially viable, cost-effective and reliable electricity supplies to rural areas.
- 4.6 To strengthen and maintain close co-operative links between the TEC and the Department of Rural Development and the Kaupule.
- 4.7 To promote the development and use of Renewable Energy to sustain the provision of electricity throughout Tuvalu through TEC.

5.0 Renewable Energy

- 5.1 To establish and maintain a database for all available RE sources and technologies to foster better planning, use and management of RE sources and technologies.
- 5.2 To ensure Tuvalu's limited biomass and other renewable energy resources are used efficiently and in an economically, environmentally and sustainable manner.
- 5.3 To maximise the contribution of appropriate, proven, affordable and cost-effective renewable technologies utilising indigenous energy resources to help meet Tuvalu's energy needs.
- 5.4 To develop local expertise in the installation, operation, management and maintenance of technically and economically proven renewable energy systems;
- 5.5 To encourage the use of renewable energy as an alternative energy source where technically and economically feasible including but not limited to solar technologies.

- 5.6 To pursue the use of copra bio-fuel as a substitute for diesel fuel in both transportation and electrification systems.
- 5.7 To develop partnerships with potential foreign and local investors, donors and agencies in seeking funding sources for the development of renewable energy programmes in Tuvalu.

6.0 Energy Conservation and Efficiency

- 1. To ensure that Government, commercial and private users are encouraged to use energy conservation and efficiency programmes
- 2. To ensure TEC adopts energy conservation and efficiency measures in its operations including generation, transmission and distribution systems.
- 4. To promote the use of renewable energy as a means to achieve energy efficiency where attainable
- 5. To ensure that service providers such as TEC have a proper recording system in accordance with best practice standard.
- 7. To promote public awareness in conservation and efficiency use
- 8. To promote the use of energy saving measures including the use efficient appliances and equipment

7.0 Environment

- 7.1 To minimise the adverse impact of energy production, distribution and consumption on the Tuvalu environment, and to ensure that energy resources are consumed in an equitable and environmentally sustainable manner.
- 7.2 To ensure the close co-operation and co-ordination of organisations in the energy sector within the framework of the National Environmental Management Strategy.
- 7.3 To promote EIA in all energy sector development.
- 7.4 To promote public awareness programmes on the impact of energy related pollution on the environment.