ENGENDERING POWER SECTOR POLICY IN EASTERN AND SOUTHERN AFRICA[1]

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Abbreviations and Acronyms

AFREPREN/FWD	African Energy Policy Research Network
BPC	Botswana Power Corporation
CEDAW	Conference on the Elimination of Discrimination Against Women
DFID	Department for International Development
DoE	Department of Energy
EIU	Economist Intelligence Unit
ELCI	Environment Liaison Centre International
ERB	Electricity Regulatory Board
EREP	Extended Rural Electrification Programme
FY	Financial Year
GDI	Gender-related Development Index
GDN	Global Development Network
GDP	Gross Domestic Product
GEM	Gender Empowerment Measure
GNP	Gross National Product
IEA	International Energy Agency
IPP	Independent Power Producer
IPTL	Independent Power Tanzania Limited
JICA	Japan International Cooperation Agency
KenGen	Kenya Electricity Generating Company
KPLC	Kenya Power and Lighting Company
LPG	Liquefied Petroleum Gas
MDGs	Millennium Development Goals
MoE	Ministry of Energy
NGO	Non-Governmental Organisation
ODI	Overseas Development Institute
PV	Photovoltaic
REA	Rural Electrification Agency
REB	Rural Energy Board
REF	Rural Electrification Fund
SIDA	Swedish International Development Agency
TANESCO	Tanzania Electric Supply Company Limited
TANWATT	Tanzania Wattle Company
TV	Television
UEB	Uganda Electricity Board
UETCL	Uganda Electricity Transmission Company Limited
US	United States
ZESA	Zimbabwe Electricity Supply Authority

List of Units

GWh	Gigawatt hour
kgoe	kilogrammes of oil equivalent
km^2	square kilometres
kWh	kilowatt hour
MW	Megawatt
P	Pula
TWh	Terawatt hour
USc	United States cent
US$	Unites States dollar
ZW$	Zimbabwe dollar

Abstract

In Eastern & Southern Africa, the inclusion (or non-) of gender in national power sector policy is examined by AFREPREN/FWD researchers in four countries, and how gender and energy research can influence this. Power sector reform in the region has not considered differential impacts on women and men. A review of energy sector policy documents revealed that there appears to be a growing awareness among policy makers and in policy statements that the power sector will only achieve sustainable development if gender analysis is integrated into policy formulation but that this backed only by vague policy objectives. Policy making in the energy sector in the region has been male dominated and had little consultation with end users and producers. Gender research could have a more effective impact on the policy process through a thorough understanding of the sector and interests; credible, relevant messages; and appropriate alliances and "chains of legitimacy" between beneficiaries, gender researchers, NGOs, and policymakers.

Acknowledgments

This AFREPREN/FWD case study builds on a Global Development Network five-country study on the research linkages in the energy sector in Eastern and Southern Africa. The authors of the regional case study were Emma Crewe, Stephen Karekezi and Jennifer Wangeci, while those responsible for the country case studies were Nozipho Wright, Pauline Kathambana, Florence Gwang'ombe and Dorcas Kayo. AFREPREN is grateful to the following for reviewing the case studies: Andrew Barnett, Elizabeth Cecelski, Joe Dunkerley, Michael Matly, Jyoti Parikh, May Sengendo and Matthew Wright.

Executive Summary

Overview of the power sector

Access to energy in sub-Saharan Africa, as with other resources, is not only constrained by physical shortages but by unequal power relations between women and men. Policymakers have often failed to recognise gender inequalities with the result that supposedly gender-neutral energy policies discriminate against women (Clancy and Feenstra, 2004). On grounds of both social justice and efficiency, gender mainstreaming is worth prioritising. The process of engendering energy processes will require better use of gender research although this has had only limited impact on policy to date. This regional case study reviews energy policy documents and energy policymaking processes in Botswana, Kenya, Tanzania and Zimbabwe to assess the gender dimension. The review focuses on the overall energy sector and then focuses down on the power sub-sector. It examines how gender research could best influence power sector policymaking in the future. More specifically, the regional case study assesses the impact of research interventions in strengthening the gender dimension of national power sector policies with particular attention to Botswana, Kenya, Tanzania and Zimbabwe.

The provision of electricity in sub-Saharan Africa is largely confined to the privileged urban middle and upper income groups, as well as to the commercial and industrial sub-sectors, while household electrification in rural areas remains limited (AFREPREN, 2003; Okumu, 2003; Kinuthia, 2003). On the assumption that electricity is necessary for development, governments have tended to finance the power sector and, in many countries, subsidise electricity to keep prices low, although the benefits of such a policy benefit less than 30% of the population (Karekezi *et al.*, 2004). The perceived need for power sector reform in Africa arose from dissatisfaction with the poor technical and financial performance of state-owned electricity utilities and their inability to mobilise sufficient investment capital for the electricity sub-sector's development and expansion. Little consideration has been given to the differential impact of reform on women and men (Karekezi and Kimani, 2002).

Power sector policymaking processes from a gender perspective

A review of power sector policy documents reveals that there appears to be a growing awareness amongst policymakers that the power sector will only achieve sustainable development if gender analysis is integrated into policy formulation. However, the references are mostly either (a) **vague** objectives that are difficult to measure, or (b) **narrow**, practical and welfare-oriented rather than strategic and integrated into a comprehensive gender framework. Energy policymakers have either failed to perceive a need for gender mainstreaming or expressed the view that their unfamiliarity with the subject makes it difficult to formulate specific, measurable objectives and strategies within an integrated framework.

If aiming for an ideal power sector policymaking process, both women's practical and strategic interests need to be represented during policy formulation. This will involve the direct representation of women's interests by individual women users and producers themselves as well as indirect representation by elected representatives, representative community-based groups, non-government organisations and researchers. In each step of policymaking, consideration has to be given to how decisions will impact differently on various subgroups of the population – including women, men, girl and boy children – and on the relationships between them.

An engendered energy policy would:

- Put in place the prerequisites for engendering energy policy within six frameworks: participatory, methodological, legal, political, institutional and financial. The process of establishing the frameworks will require the representation of women's interests throughout;

- Consider both men's and women's access to energy services, how to make a full range of services available to both, options for affordable, secure and safe technology and services, and strategies for sustainable use of energy;

- Both make available energy technologies and services that match the different gendered dynamics and explore options and engage in public education to reform the unequal distribution of energy decision-making, workloads and resources.

To date, policymaking in the energy sector in sub-Saharan Africa has been male-dominated and there has been insufficient consultation with end users and producers. The result has been that women's needs and interests have been neglected. In Zimbabwe, there has not been a deliberate effort to include women in the selection process for members of the governmental and consultative policymaking bodies. In Botswana, households were ignored during consultations held to help develop national energy policy. The process in Tanzania involved consultations with government, the private sector and NGOs, rather than end users or producers. Although wider stakeholder participation took place in Kenya, through a public consultative forum, policy documents reveal that the process only allowed limited incorporation of women's needs and interests.

Gender research influences on power sector policy

The four case studies illustrate that the direct influence of research, and especially gender research, on power sector policy formulation has been limited. This is partly due to the global pressures and national contexts that combine to have a significant impact on the power sector. The major shift in governmental approaches to energy in all four countries – whereby the government's role in the urban energy sector will be replaced by the private sector – appears to have emerged out of political and ideological dogma rather than being based on research.

The specific influence of researchers varies in the different countries: in Kenya, market researchers played a part; in Botswana, policymakers and researchers met at a policy seminar, policy documents cite research references, and the government relies on consultants' studies to inform their policy formulation while the structure of political institutions at the local level is underused; in Zimbabwe, research has largely ignored gender and been used in general to design efficient strategies rather than goals. The focus of a recent task force was on the office of the regulator, rather than on wider reform, and the emphasis of the research effort had more to do with the experiences of other countries than the needs of communities and grassroots women and men in Zimbabwe. Despite these inputs, the researchers usually had little control over outcomes.

What role can gender research play in influencing power sector policy?
The potential role of gender research on policymaking is considerable. It seems likely that researchers can have a more effective impact on the policy process if they plan a strategy that is based upon a thorough understanding of external influences, national vested interests and attitudes, and windows of opportunity; if the key messages are relevant, credible, convincing and well-represented; and appropriate links, alliances and 'chains of legitimacy' are created between beneficiaries, researchers, NGOs, policymakers and other stakeholders.

Context: gendered politics, institutions and global influences
In motivating policymakers to engender energy policy, it is worth considering the underlying principles that can support gender mainstreaming: welfare, empowerment, equality/equity, efficiency and anti-poverty. Conflicting rationales are less likely to impede gender mainstreaming if motives are transparent and openly discussed. An obvious strategy for rallying around a shared principle underpinning gender mainstreaming is to focus on international agreements, such as CEDAW, the Beijing Platform for Action and the MDGs.

At the institutional level, it is clear from all four case studies that awareness creation about engendering energy policy is required. Whether already receptive to the idea of a more integrated gender policy but lacking strategies, or not yet fully convinced of the need for a gendered energy policy, training and development is needed on different aspects of gender analysis within policymaking institutions. Opportunities at the national level for pursuing a gender agenda vary between countries.

Evidence on gender: credibility and communication
A critical question for researchers to ask is 'what evidence is required for: (a) motivating policymakers to engender energy policy, and (b) for the actual process of integrating gender into energy planning and implementation?' An important tool for achieving both is the collection of gender-disaggregated data. While the general principle of disaggregating data by gender can be made for all countries, the requisite data will vary across nations and localities. Timely, relevant and practical information that can motivate or solve problems will help the process of influencing policymakers. Even so, it may be ignored unless packaged and presented in appropriate ways. For example, clear and informed guidance should be presented in simplified and non-technical language, and the advantages of a multimedia strategy, using different communication channels for different audiences, are apparent.

Links, legitimacy and women's representation
Appropriate links have to be forged between the various stakeholders before gender can be integrated into the energy sector. Firstly, because policymakers will not take any notice of researchers advocating a gender agenda if they do so entirely from a distance. Secondly, since the energy sector has so far been male-dominated, the representation of women's interests will require the full participation of women in decision-making processes on various levels. All four case studies have emphasised the need to improve women's representation, be it in the energy sector, in task forces, in intermediate bodies, in scientific and technical institutions, or on policymaking bodies. Mechanisms, such as the following options, are also needed to ensure that other women stakeholders' views and demands are centre-staged, particularly those of poorer women in rural areas who are usually marginalised in decision-making:

- Establish structures that formally include women's organisations, for example those that represent women at the grassroots, in planning, implementation and evaluation;

- Join and nurture networks that promote the integration of gender into the energy sector;

- Institutionalise relationships with researchers that have legitimate links with women's organisations and/or women stakeholders and who can act as intermediaries in voicing their concerns.

1 Introduction and background

1.1 Introduction

A reliable energy supply is central to sustainable development; however, two billion people still lack access to basic energy services. Sub-Saharan Africa has low rates of modern energy consumption, especially in rural areas where the poorer households tend to be. At 22%, Sub-Saharan Africa has the lowest electrification level in the world (IEA, 2002). Access to energy, as with other resources, is not only constrained by physical shortages but also by the unequal power relations between women and men. Policymakers have often failed to recognise gender inequalities, with the result that supposedly gender-neutral energy policies discriminate against women and marginalise their needs (Clancy and Feenstra, 2004). For example, reforms of the electricity industry aim to improve financial and technical performance through privatisation rather than responding to the equally important challenge of improving energy services (electricity, LPG, kerosene, and improved and cleaner biofuel use) for the urban and rural poor, and especially for women (Karekezi and Kimani, 2002).

Women in Africa are the main users of traditional energy sources for household activities. They have expertise in the burning properties of different fuels, fire and heat management, fuel-saving techniques, and the advantages and disadvantages of various fuels and stoves; they purchase fuels, stoves and other household energy appliances; and they influence the direct and indirect energy consumption patterns of their households (Reddy *et al.*, 1997). Furthermore, cultivation, planting, harvesting and marketing of agricultural produce, as well as small-scale processing, is largely dominated by women. Women grow most of the family's food and grind grain and other staples by hand (Planet Wire, 2002). They are usually entirely responsible for all household work, including the collection of fuel and water, and they place a high value on time saving, especially during peak agricultural periods (World Energy Council, 1999). Partly as a result of this unequal distribution of household labour, women often experience higher levels of social, economic and political deprivation, with female-headed households facing the most severe levels of poverty. Women face far greater health risks associated with biomass fuel use in cooking; for example, their exposure to smoke is two to four times higher than men's, and the incidence of acute respiratory diseases among women is twice as high in Kenya as that of men, and the prevalence of asthma and chronic bronchitis is higher among women than men in Kwazulu Natal, South Africa, even though they smoke less (Ezzati and Kammen, 2001, p11; Glajchen, 2001, p11).

While gender-related studies have demonstrated that poverty impacts on women and men differently, with women often experiencing the more severe levels of deprivation, the impact of this on policymaking processes has been limited. In many parts of Africa, the focus on the *supply* of electricity to the rural areas failed to take gender issues into consideration. Schemes have aimed to provide basic infrastructural facilities – such as water, health facilities and electricity to stimulate development – while the demand side has been neglected. An engendered power sector policy would require far greater attention to the demand side, looking at the specific energy needs of both men and women and the best strategies to put in place to address them. It would entail a comprehensive database (with gender-disaggregated data) to enhance the knowledge base in terms of energy demand profiles, available and cost effective energy options, income patterns, energy services required, financing options and so on. This would, in turn, allow the formulation of strategies and programmes that are gender responsive (Clancy and Feenstra, 2004, p10).

The poverty and energy situation in Africa presents an onerous challenge to policymakers, analysts and researchers. While there is no magic bullet solution, well-crafted policy interventions could ensure that energy contributes to improving the livelihoods of the poor – and especially poor women – in line with the objectives of the millennium development goals (MDGs). Evidence indicates that incorporating gender could enhance energy policy formulation and implementation (Karekezi and Wangeci, 2004, p1). In the case of Tunisia, rural electrification is 'rooted in a strong national commitment to a broader program of rural development, gender equity and the reduction of social inequities.' The result of this, and integrating rural electrification policy with investments in water, transportation, communications, health and education, has been positive linkages between rural electrification and education, health services, access to information and economic opportunities for women and girls (Celcelski *et al.*, 2001, pp7-22). Thus, on grounds of both social justice and efficiency, gender mainstreaming is worth prioritising. However, with the exception of Botswana, South Africa, Uganda and Zambia, most Eastern and Southern African countries have not made any attempt to engender their energy policies despite the legal obligations that require the incorporation of gender, including:

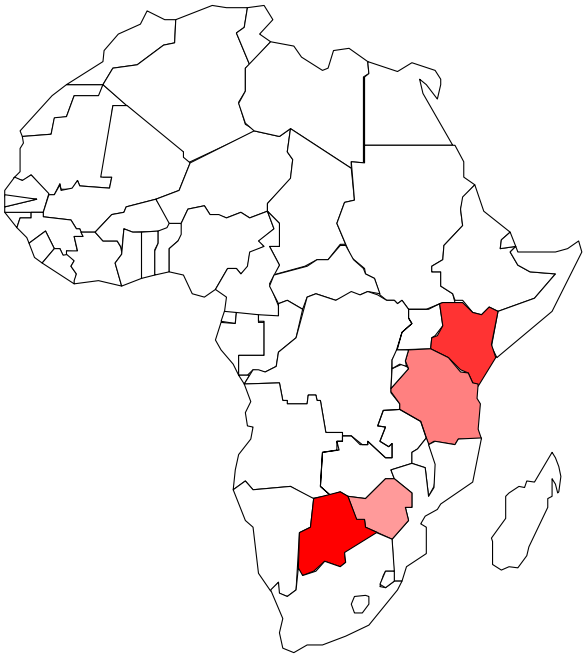
- Beijing declaration
- CEDAW (Conference on the Elimination of Discrimination Against Women)
- Durban Women in Energy Ministers Conference
- Millennium Development Goals
- Constitutional right to equality

Institutional barriers impede governments in implementing gender-sensitive energy options, the principle one being a lack of commitment to and knowledge of energy technology options that satisfy end users' priorities (Karekezi and Ranja, 1997). Partly for this reason, research on gender, energy and poverty has had only a limited impact on policy to date. This regional case study reviews the extent to which, and how, gender research has influenced policy, and how it could better influence power sector policymaking in the future. It investigates whether gender relations constitute a key variable in determining the impact of energy policies, programmes and projects - a key research question of the Department for International Development - and how a gender perspective might strengthen power sector policy in Eastern and Southern Africa. The focus is on the urban and rural power sector because substantial gender research has been undertaken in other energy sectors, notably renewables and biomass. More specifically, the study will address the power sector policy formulation process and assess the impact of research interventions on strengthening the gender dimension of national power sector policies with particular attention to Botswana, Kenya, Tanzania and Zimbabwe (figure 1.1). To summarise, the central research question of the study is:

> *How best can gender research influence power sector policy in Eastern and Southern Africa?*

This question assumes that incorporating a gender perspective will strengthen power sector policy. As such, it is related to one of DFID's study research questions 'Do gender relations constitute a key variable in determining the impact of energy policy, programmes, and projects?' To address this, this study will identify ways in which gender research can influence power sector policy. By implementing the recommendations, countries could have power sector policies that recognise the gender-differentiated electricity needs and uses, and factor in the gender-differentiated impact of poverty and its implication on new connections.

Figure 1.1: Map of Africa showing the countries covered



1.2 Methodology used in the study

This regional study builds on an ongoing Global Development Network (GDN) study on research linkages in the energy sector of Eastern and Southern Africa. The GDN study aims to identify both contextual and specific characteristics of research undertakings that have made them effective in influencing policymaking in the energy sector. Specifically, the study attempts to identify those research undertakings that have particularly influenced the renewable energy policies in five countries: Botswana, Kenya, Tanzania, Uganda and Zimbabwe. This GDN study is part of the 'Bridging Research and Policy' global research project coordinated by the Global Development Network.

The study reviews the different steps in the energy policymaking processes in the five countries and examines how research undertakings contribute at different stages of the energy policy formulation process using GDN's framework of explanatory variables (evidence, links, context of policy formulation, and external influences). Research that successfully influenced national energy policy documents is identified and the characteristics that may have helped it to be successful are analysed. The study then makes various recommendations on strengthening the impact of research on policy.

The study also links with AFREPREN's embryonic Theme Group on *Gender and Energy,* which undertakes gender-differentiated analysis of rural energy policies in Africa. The key research issues in this theme group are:

- Gender sensitivity of governments' and utilities' policies and programmes on the provision of modern energy to rural areas for domestic use and for income-generating activities

- Gender analysis of energy practices in rural households and energy use in rural income-generating activities

The researchers who carried out the country case studies were as follows:

Table 1.1: Case study researchers

Case Study	Researcher	Institution	Title	Gender
Botswana	Nozipho Ditlhale Wright	Botswana Technology Centre	Communications Officer	Female
Kenya	Pauline Kathambana	Kenya Power and Lighting Company (KPLC)	Communications Assistant	Female
Tanzania	Florence Gwang'ombe	Tanzania Electricity Supply Company (TANESCO)	Research Electrical Engineer	Female
Zimbabwe	Dorcas Kayo	Zimbabwe Electricity Supply Agency (ZESA)	Chief Business Planner	Female

The capacity-building aims of this study were to develop the capacity of (a) gender and (b) power sector researchers to understand gender and electricity linkages. The key target audience is energy policymaking bodies (Ministries and Departments of Energy) in the four focus countries – Botswana, Kenya, Tanzania and Zimbabwe, as follows:

- **Botswana**: the Department of Energy (DoE, formerly Energy Affairs Division)
- **Kenya**: the Ministry of Energy
- **Tanzania**: the Department of Energy, within the Ministry of Energy and Minerals
- **Zimbabwe**: the Rural Electrification Agency in the Ministry of Energy and Power Development (formerly the Ministry of Transport and Energy)

The study involved the following data collection and analysis:

1. Review of secondary sources on the sub-Saharan African power sector, reforms and the relationship between gender and energy;

2. Review of the existing literature on gender and energy policy formation in general, and the power sector in particular, in each of the four countries;

3. Analysis of the existing energy policies, power sector policies and legislation relating to the policymaking process in the four countries;

4. Qualitative questionnaires and interviews with policymakers and researchers from the power sector (see table 1.2).

Table 1.2: Individuals interviewed during the case studies

Person Interviewed	Gender	Institutional Affiliation	Title/Position
Botswana			
Midas Sekgabo	Male	Energy Affairs Division	Acting Head of Renewable Energy Unit
Mabel Gaborutwe	Female	Energy Affairs Division	Coordinator of the policy formulation process
Kenya			
David Mwangi	Male	KPLC	Chief Manager - Planning, Performance Monitoring & Research
Kevin Kariuki	Male	Industrial Promotion Services Kenya	Head of Infrastructure
Peter Kinuthia	Male	KPLC	Senior Engineer - System Planning
Mrs Benedicta Nzioki	Female	Ministry of Energy	Deputy Secretary - Administration
Grace Omollo	Female	Kengen	Communications Officer
Zimbabwe			
Mr. P. Muverengwi	Male	Department of Energy Resources	Principal Energy Development Officer
Mrs. G. Ngoma	Female	Department of Energy Resources	Principal Energy Development Officer
Mrs. C. Machimbodzofa	Female	ZESA	

The key questions informing this analysis were:

- Is gender mentioned in the national energy policy? If yes, in what context?
- Is gender mentioned in the national power sector policy? If yes, in what context?
- Are there mechanisms in the national power sector strategy for stakeholder input and participation?
- What is the gender composition of the power sector policymaking body (if one exists)?
- Are gender experts or women's organisations involved in the power sector policymaking process?

This enabled researchers to:

- Build an understanding of the context of energy policymaking in each country;
- Assess the extent to which gender is integrated into policymaking structures and processes;
- Outline the ideal power sector policy formulation process that would lead to the preparation of appropriate national power sector policy documents;
- Highlight the stages of the power sector policy formulation process that provide ideal entry points for influence by research;
- Identify those research influences that have had a significant impact on the power sector policymaking process;
- Propose an approach that can be used to strengthen the impact of gender research on power sector policies in Africa.

Indicators to assess whether gender was considered in policymaking were developed as shown in Table 1.3:

Table 1.3: Indicators to assess consideration of gender in policymaking

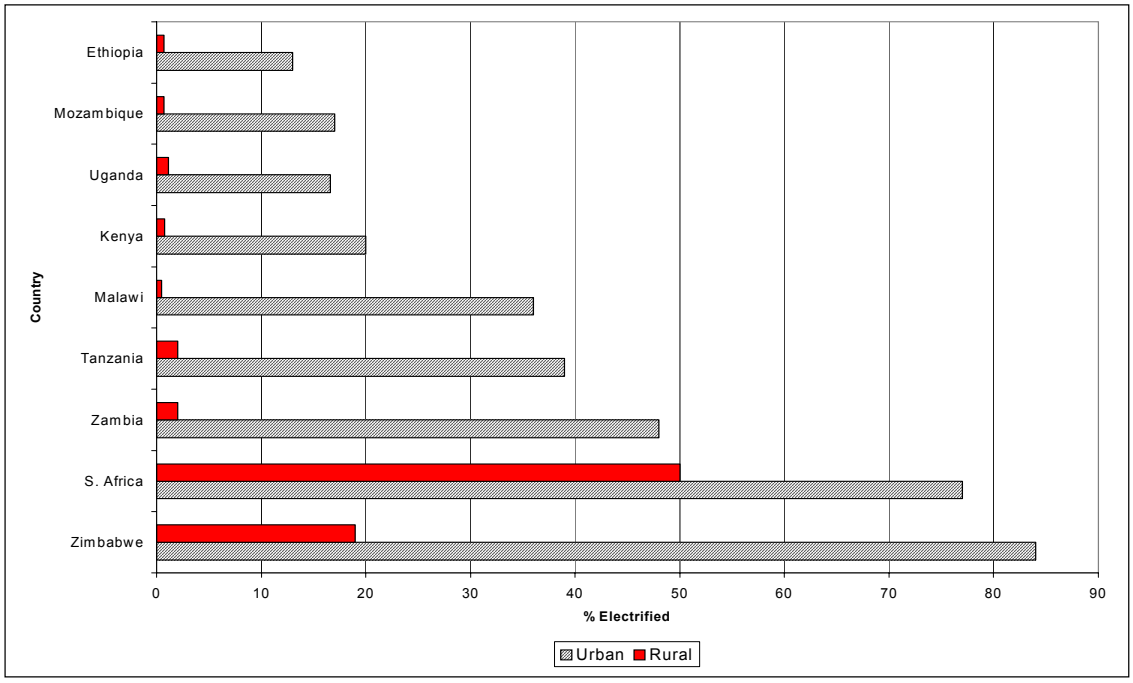
Terminology	Measurables	Indicators
Gender relations	• Gender in national energy policy	• Frequency of use of term gender or women in national energy policy • Number of gender-explicit national energy policy measures/strategies
Gender relations	• Gender dimension or perspective in power sector policy	• Number of gender-explicit power sector policy strategies/measures • Frequency of the term gender or women in power sector policy documents (or relevant extracts from energy policy documents) • Gender composition of the planning body for power sector policy • Number of gender experts or women's organisations involved in the power sector policymaking process

Not surprisingly, the researchers faced various challenges while undertaking the study. There was limited background information available on the process of drafting national energy policies. No documentation on the workshops or discussions held prior to the formal initiation of the policy formulation process was obtainable, thus making it difficult to identify any research influences. Exploring the links between gender and policymaking was complex. In some countries, policymakers never considered gender as an issue. Their focus was on gender as a developmental tool or catalyst at the macro-level. Furthermore, identifying research that influenced policymaking processes was impossible in cases where policy was formulated without any clear research input. Finally, synthesising the four country studies into a regional study was challenging because of the diversity of the four places.

1.3 Description of Africa's power sector

The African power sector is characterised by small systems, with more than three-quarters of the continent's installed capacity in South Africa and Northern Africa (Karekezi *et al.*, 2004). Total electricity production in Africa in 2000 was 441 TWh. The bulk is generated in thermal stations and only 16.52% produced by hydropower despite being the far larger potential. The average per capita annual consumption in sub-Saharan Africa (excluding South Africa) is only 112.8 kWh compared to over 2500 kWh per capita in Europe and Central Asia (World Bank, 2003). The provision of electricity is largely confined to the privileged urban middle and upper income groups, as well as to the commercial and industrial sub-sectors, while household electrification in rural areas remains low (Figure 1.2).

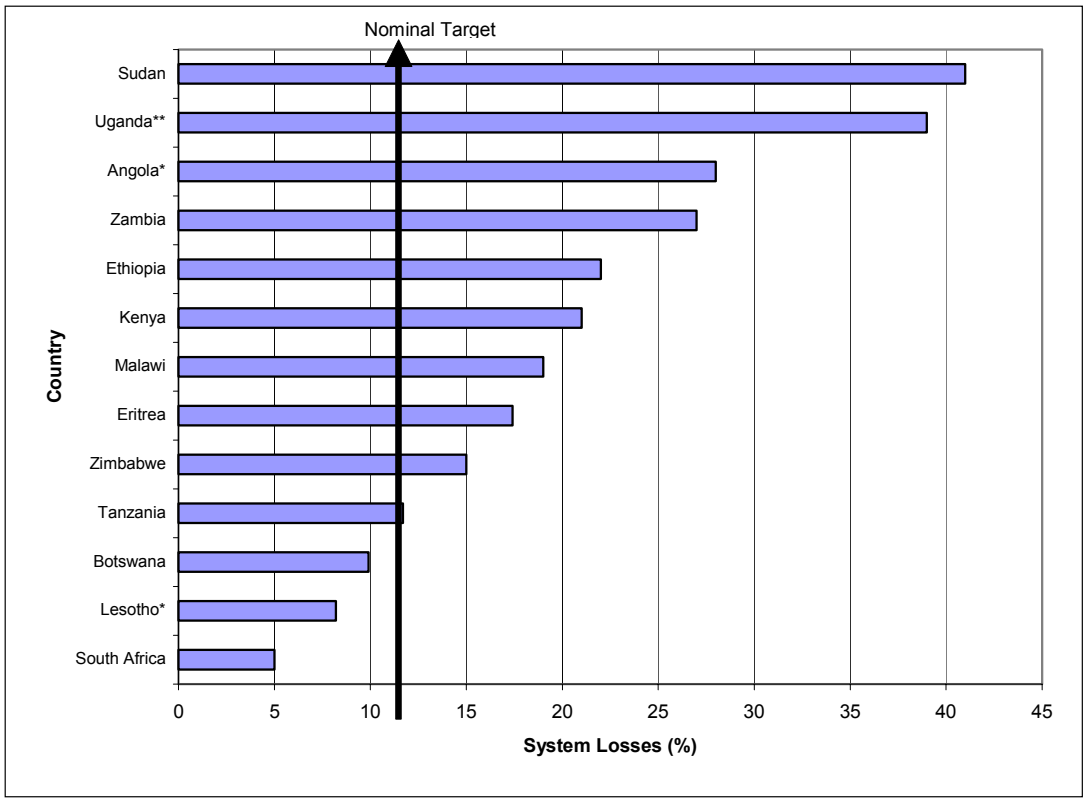
Figure 1.2: Urban and rural electrification in selected African countries, 2001 (in %)



Sources: AFREPREN, 2003; Okumu, 2003; Kinuthia, 2003

The performance of the power sector in most of sub-Saharan Africa has been held back by the traditional power utilities' monopoly over national electricity industries. The result has been an unreliable power supply, low capacity utilisation, poor maintenance, and high transmission/distribution losses. System losses can reach 41%, far higher than the international target of 10-12% (Figure 1.3). The customers per employee ratios are below the international norm in nearly all sub-Saharan countries. The financial performance is equally unsatisfactory with sizeable debts owed by customers and low investment capital for development and expansion. On the assumption that electricity is necessary for development, governments have tended to finance the power sector and, in many countries, subsidise electricity to keep prices low, although the benefits of such policies accrue to less than 30% of the population (Karekezi *et al.*, 2004).

Figure 1.3: System losses in selected African countries, 2001 (%)



Note: * - 1996 data; ** - 2002 data
Sources: AFREPREN, 2003; Okumu, 2003; Kinuthia, 2003

The situation in the four specific case study countries (Botswana, Kenya, Tanzania and Zimbabwe) reflect these sub-Saharan African patterns but also variability in generation and institutional arrangements.

The government-owned Botswana Power Corporation (BPC) is the national utility responsible for the production and distribution of electricity in Botswana. Electricity for the national grid is generated at the Morupule coal-fired power station in the Central District. It has a capacity of 132 MW, which is insufficient to provide power to the entire country. Local generation is supplemented by cheaper imports (currently meeting more than two-thirds of local demand) from South Africa (75%), Zimbabwe, Zambia and Namibia. In addition, a small diesel power station (under contracted management) continues to supply power in the Ghanzi area, although this is to be phased out on the commissioning of a new cross-border transmission line from Namibia (BPC, 2003; Government of Botswana, 2003).

The contract with Eskom of South Africa will end in 2007. However, demand for power in the region is rising steadily, while the Morupule station is reaching maturity and may not be able to continue to maintain its base load production (averaging 91% of capacity). As a result, there are plans to construct new transmission links, substations, distribution lines from Namibia and South Africa as well as for a 3500 MW hydropower station in Democratic Republic of Congo along with Angola, Namibia and South Africa (BPC, 2003). Table 1.5 shows the performance of Botswana's power sector.

Table 1.4: Performance of the power sector in Botswana (2002/03)

Electricity Source (GWh)	
Morupule	935.6
Station usage	105.9
Sent out	829.7
Additional Purchased	1605.7
Sales disposition	
Mining	1001.1
Commercial	533.1
Domestic	419.7
Government	196.2
Transmission and distribution losses (GWh)	285.3
System losses	11.7
Total consumers	108 985
Sales growth (%)	
Mining	8.9
Commercial	11.5
Domestic	13.3
Government	5.1
Total sales growth	*10.0*

Source: BPC, 2003

The rural electrification programme has connected all cities and towns plus 209 villages in Botswana. During the financial year 2002/2003, there was a 12.4% increase in the number of customers (from 96 961 to 108 985). About 90% of the new connections were in the domestic category. The connectivity levels are 43% for urban households and 18% for rural households (Government of Botswana, 2003).

In Kenya, the power sector has five major players:

1. Kenya Electricity Generating Company (KenGen) which is responsible for managing public power generation facilities. It generates and sells electricity in bulk to the Kenya Power and Lighting Company (KPLC) and is also responsible for developing new public sector facilities to meet increased demand.

2. The Independent Power Producers (IPPs) who build, own and operate power stations and sell power in bulk to KPLC.

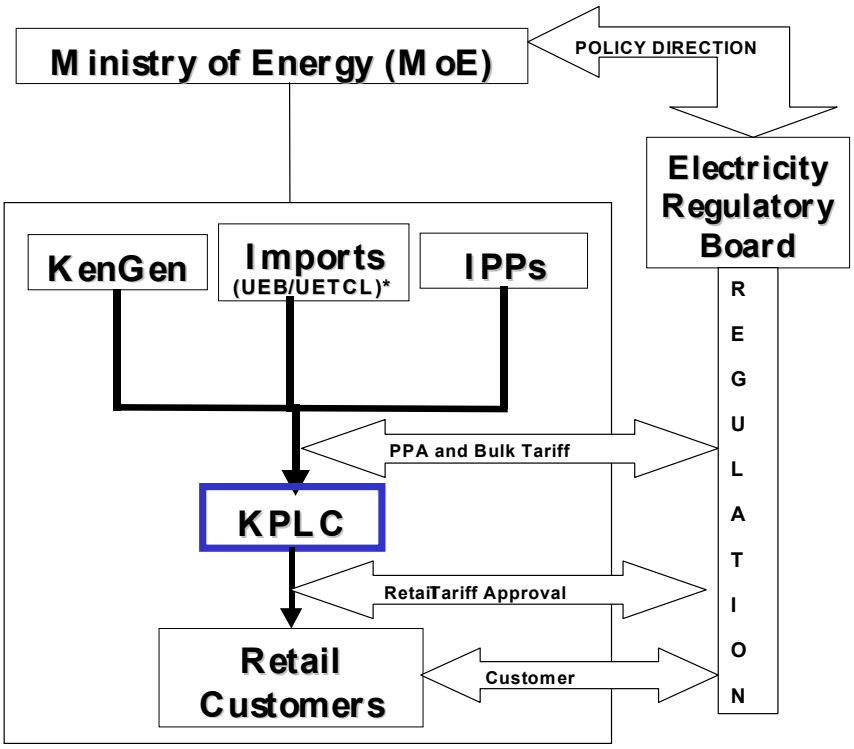
3. The Kenya Power and Lighting Company (KPLC) which owns all transmission and distribution assets. The company buys electricity from generating companies in bulk for transmission, distribution and retail to customers.

4. The Ministry of Energy which formulates policy on the energy sector, in addition to administering electrification of rural Kenya.

5. The Electricity Regulatory Board's primary role is to oversee the generation and sale of electricity, to review electricity tariffs, and enforce safety and environmental regulations in the power sector. The Board also safeguards the interests of electricity customers.

Figure 1.4 shows the relationships among the power sector institutions

Figure 1.4: Institutional structure of Kenya's power sector



Note: In January 2002, KPLC signed a contract for power imports directly with the Uganda Electricity Transmission Company Limited (UETCL) following the restructuring of Uganda's power sector.

Source: KPLC, 2003b

Currently, Kenya's installed capacity stands at 1223.48 MW. Of this, 1155.35 MW is effective capacity. Electrification levels stand at 15% for all households in the country, and 4% for those in rural areas. The power delivery system consists of an interconnected network of transmission and distribution lines covering all major urban centres. Expansion of the network has been at a rate of three percent annually. In the past four years, power system losses have remained at just below 22% of net generation (KPLC, 2003a). This figure includes both technical and non-technical losses. As of June 2003, the ratio of employees to customers in KPLC stood at 104:1.

The early power sector in Tanzania consisted of small, privately-owned companies. In 1964, the Government nationalised the power supply industry into one company known as Tanzania Electric Supply Company Limited (TANESCO) with the aim of increasing access to electricity. Since then, TANESCO has been the sole vertically-integrated electricity supplier on the mainland. Electricity supply consists of both interconnected and isolated systems; 70% of the supply is from hydro and 30% is from diesel oil and imports from neighbouring Uganda and Zambia. Installed generation capacity on the interconnected transmission grid amounts to 863 MW from both hydro and thermal generation facilities, with the effective capacity made up of 555 MW hydro and 251 MW thermal. Four IPPs supply power to the national utility: a 118 MW Ubungo gas plant, a 100 MW diesel plant run by Independent

Power Tanzania Limited and two small plants owned by Kiwira Coal Mine and TANWATT, each supplying about 4 MW. Imports through cross-border interconnections are 8 MW and 5 MW from Uganda and Zambia, respectively. Total losses in the system amount to 28.7%, of which 25.4% are distribution losses and 3.3% transmission losses. Out of the distribution losses, 16% are commercial losses and 9.4% is technical losses.

To date, only about 10% of the country's population (34.9 million, 2002 census) have access to electricity (that is, 530 000 customers as of April 2004). In other words, 90% of the population continue to rely on other sources of energy for cooking, lighting, clinics, schools and community centres. The annual electricity consumption per capita is about 100 kWh and this is estimated to be rising at 10% annually. While the electrification level in urban areas is about 37%, the level of access to electricity in rural areas is only 1.5%. The suppressed demand (i.e. the demand which corresponds to the available supply capacity) is 560 MW and the annual growth in demand is estimated at about 8% up to 2015 (based on the power demand forecast in the master plan). Annual electricity generation is more than 3000 GWh.

For many years, TANESCO was compelled to subsidise domestic use by charging industries high tariffs. It has experienced problems related to long delays in electricity billing, customer non-payment for services, delays in tariff reviews by the government, power shortages and blackouts. Government control of the utilities in the country has resulted in less autonomy and hence less accountability. Furthermore, the legislation encourages monopolistic power within the sector, giving a licensed utility exclusive rights to supply electricity within specified areas.

Zimbabwe Electricity Supply Authority (ZESA) Holdings, as it has been called since Zimbabwe's restructuring programme, has an installed capacity of 1961 MW with a generation mix comprising hydro and thermal power. Small-scale hydro generation accounts for about 68 MW but most of it is for own consumption. 65.4% of the electricity in Zimbabwe is locally generated and 34.5% imported (ZESA, 2001; ZESA, 2002). The performance of ZESA Holdings is given in the following table.

Table 1.5: Performance statistics in Zimbabwe (2000-2002)

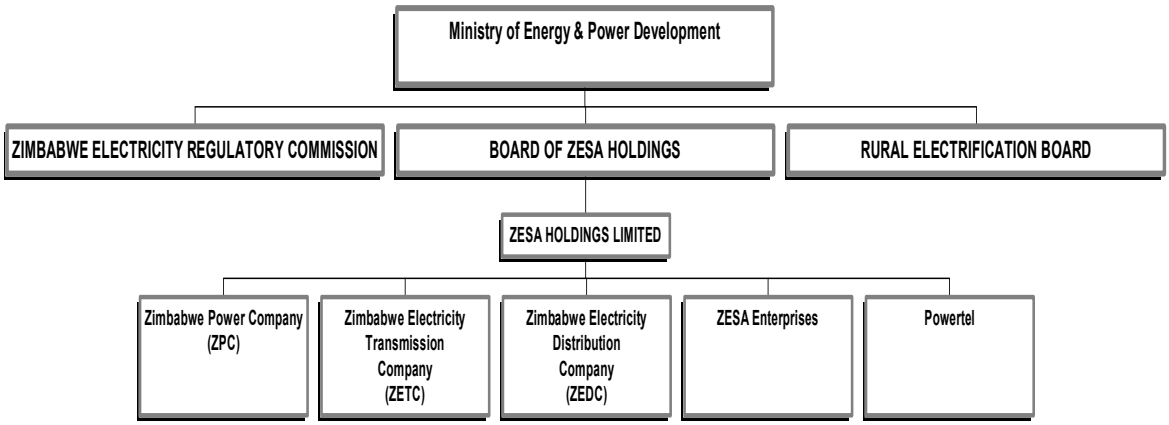
Variable	2000	2001	2002
Population with access to electricity	38%	39%	46%
Transmission losses	3.9%	5.9%	4.3%
Unit Price (USc/kWh)	3.85	4.55	5.71
Debtor days	38	28	
Electricity Sales (GWh)	10 492	10 225	10 320
Number of customers	492 552	516 786	537 888
Electricity Consumption per capita per annum (kWh)	874	852	865
Reaction time to faults (minutes)	73	100	99
Generation trips per annum	157	15	79

Sources: ZESA, 2001; ZESA, 2002

The operational performance of the utility has been affected by high inflation coupled with acute foreign exchange shortages that have precluded importation of key equipment and components. Over the three years considered, there has been no significant change in the number of customers connected to the grid or any increase in electricity consumption per capita. However, the utility managed to record a profit after tax of ZW$ 2.5 billion at the end of FY 2002 mainly through good financial management including cost control. Significant strides were made in the implementation of the Extended Rural Electrification Programme (EREP) and this has seen the overall electrification rate rising to 46% in 2002.

The following diagram highlights the current institutional structure and the key players in the power sector in Zimbabwe:

Figure 1.5: Structure and key players in Zimbabwe's power sector

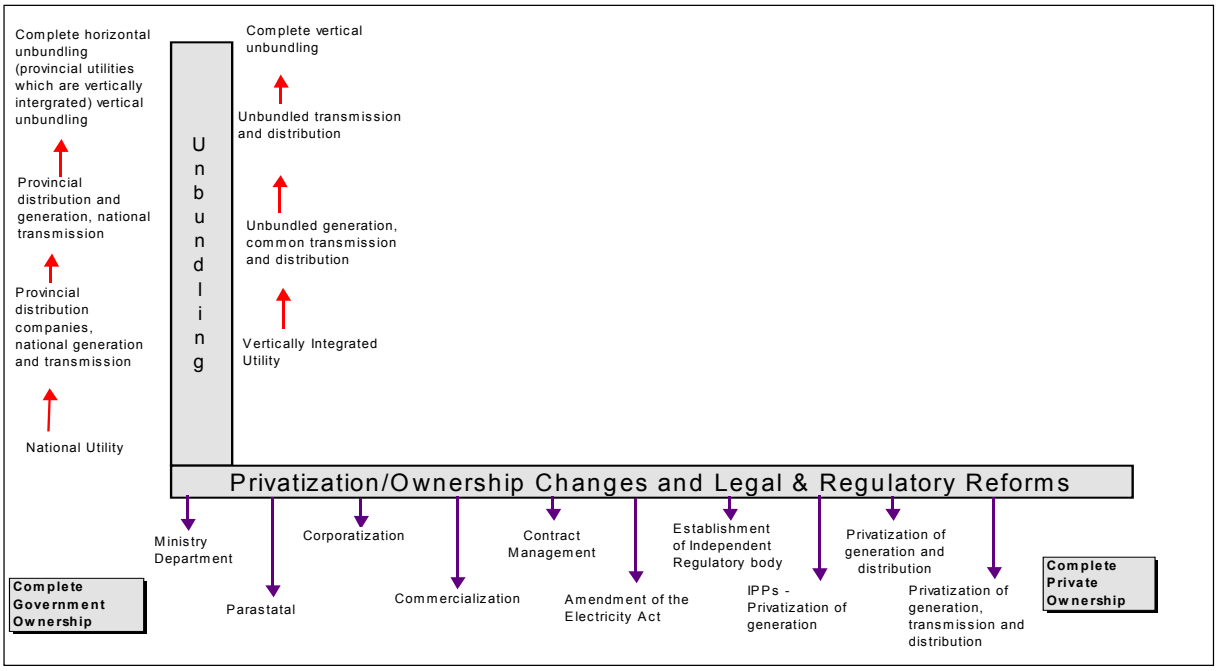


1.4 Status of power sector reforms

The perceived need for power sector reform in Africa arose from two primary concerns: firstly, the dissatisfaction with the poor technical and financial performance of state-owned electricity utilities; and secondly, the inability of utilities and the Government to mobilise sufficient investment capital for the electricity sub-sector's development and expansion. Reform of the power sector has been equated (especially by multilateral banks) with a drastic reduction in the role of government. However, the spectrum of power sector reform options is wider than this (Figure 1.6). The reform options can be broadly categorised into three clusters, namely (Karekezi *et al.*, 2004):

1. Unbundling, also referred to as restructuring;
2. Privatisation, referring to private sector involvement and/or ownership changes (a move from state to private ownership);
3. Legal and regulatory reforms.

Figure 1.6: Power sector reform options



Source: Karekezi et al., 2004

The development of Independent Power Producers (IPPs) has been the predominant reform option in sub-Saharan Africa, but otherwise it has been the slowest region in the developing world in reforming its power sector.

As reflected in Table 1.7, many of the countries reforming their power sectors have invited IPPs to meet the generation shortfall experienced by the state-owned utilities. Also popular is the corporatisation/commercialisation of the state-owned utilities to enhance their financial performance. There appears to be much slower progress in reforms aimed at minimising or withdrawing government control of the power sector, such as the establishment of independent regulatory agencies, amendment of the electricity law, unbundling and privatisation of the generation and distribution sub-sectors. This pattern is evident in all four of the case studies.

Table 1.6: Status of power sector reforms in sub-Saharan Africa (2002)

Key Step	No. of Countries (%)
Corporatisation/Commercialisation	17 (35%)
Independent Power Producers	17 (35%)
New Electricity Act	12 (25%)
Establishment of Regulator	9 (19%)
Unbundling	6 (13%)
Privatisation of Distribution	3 (6%)
Privatisation of Generation	1 (2%)

Sources: Karekezi et al., 2004

In Botswana, BPC still enjoys a monopoly in terms of electricity production and distribution although there are plans to restructure the electricity power supply and make it more competitive and efficient (Government of Botswana, 2003). A study was commissioned by

the Ministry of Minerals Energy and Water Resources to look into options and it proposed consideration of the following alternatives:

1. Improve the performance of BPC within the framework of public sector ownership and governance.
2. Privatise BPC with the aim of bringing in new management and providing a new commercial focus to utility operations.
3. Privatise generation and wholesale distribution of electricity.

The government has yet to make a decision about how to proceed with reforming the sector. BPC has made a preliminary evaluation of expanding generation at Morupule from 132 MW to 250 MW. The initial cost estimate is approximately P1.3 billion and BPC plans to fund at least half of this internally (JICA and Energy Affairs Division, 2003).

The 1997 restructuring of Kenya's power sector saw the separation of the generation function from those of transmission and distribution. This led to the formation of two companies, KenGen charged with managing public power generation facilities and KPLC in charge of transmission and distribution of electricity. The reforms brought into force the Electric Power Act 1997, which led to a review of the policy and legislation that regulates the sector, and saw the repeal of the Electric Power Act Cap 314 of the Laws of Kenya and of the Electric Supply Lines Act.

The Electric Power Act 1997 created a regulatory environment for generation, transmission and distribution of electricity, and established the Electricity Regulatory Board (ERB) – an autonomous independent sub-sector regulator - whose primary role is to oversee the generation and sale of electricity, to review electricity tariffs, and enforce safety and environmental regulations in the power sector. The Board also safeguards the interests of electricity customers. In creating the ERB, the Electric Power Act left the Ministry of Energy empowered only to handle matters of policymaking in the energy sector. To address the problems facing the power sub-sector, a number of reforms including commercialisation, introduction of IPPs, contract management, and privatisation of non-core assets are being pursued.

In Tanzania, reform has so far been limited to two commercialisation measures. Firstly, tariff rates have been raised gradually from 4 US cents in 1988 to 11.9 US cents in 2004. Secondly, in 1996, TANESCO started to implement a prepaid metering system, giving customers more control over electricity use and payments, and the company the opportunity to cut costs. However, the government is now in the process of implementing an extensive restructuring of the electricity sub-sector in order to attract investment and increase efficiency. In the new electricity industry structure, TANESCO, which is presently a vertically-integrated utility, will be divided into separate segments responsible for power generation, transmission and distribution. Generation and distribution activities will be further divided into a number of companies to allow private participation and competition. This will replace the current situation where TANESCO is the sole purchaser of bulk electricity from two large IPPs (Songas and IPTL) and has a monopoly over transmission and distribution.

Within the restructured power sub-sector, the Government will be responsible for rural electrification through the proposed Rural Energy Agency (REA) and the Rural Energy Fund (REF). The REA will be governed by a Rural Energy Board (REB), made up of key government and non-government stakeholders. The Board will oversee the administration of a REF to stimulate and co-finance private-sector-led investment in modern rural energy. The Energy and Water Utilities Regulatory Authority (EWURA) will take over from the

government as regulator of the electricity industry. Its functions will include issuing relevant licences, establishing standards for goods and services, regulation of rates and charges, and defining rules. Further it will monitor the performance of the regulated sectors in relation to levels of investment, availability, quantity and standard of services, the cost of services, the efficiency of production and distribution of services.

Zimbabwe has already witnessed a major reform programme since the passing of the Electricity Act 2002 and the Rural Electrification Act 2002. The overall objective has been to improve the financial and operational viability of the power sector and to expand existing capacity and access to electricity. This has resulted in the formation of the following successor companies:

Company	Mandate
ZESA Holdings (Pvt) Limited	Custodian of government equity in the power sector and principal shareholder of equity in subsidiary companies
Zimbabwe Power Company (ZPC)	Owns and operates all generation assets
Zimbabwe Electricity Transmission Company (ZETC)	Grid assets management, System management, electricity trading, system planning and operations
Zimbabwe Electricity Distribution Company (ZEDC)	Manages all distribution assets, undertakes supply and retail functions
ZESA Enterprises	Functions cover Transport, Projects, Production and Services and the Technology Centre.
Power Telecommunications (Powertel)	Undertakes telecommunication business

The Zimbabwe Electricity Regulatory Commission (ZERC) is now operational with a Caretaker Commissioner responsible for the setting up of the Commission. The Rural Electrification Agency operates as a stand-alone entity responsible for spearheading rural electrification in the country.

2 Power sector policymaking processes from a gender perspective

2.1 Review of the power sector policy documents

There appears to be a growing awareness among policymakers that the power sector will only achieve sustainable development if gender analysis is integrated into policy formulation. This is only the first step in mainstreaming gender in the whole process of power sector development, which includes not just statements of intent but implementation and monitoring and evaluation as well. However, it is an indicator of a commitment to the consideration of gender. In all four case study countries, gender is mentioned in policy measures.

Table 2.1: Extracts on the gender dimension in policymaking

Country	Policy Document	Gender Policy Measures
Botswana	National Development Plan 9	Sustainable development through the integration of women and gender issues into all facets of the energy provision
	Draft White Paper on Energy Policy	1. Energy programmes and projects should impact positively on women, the principal users of energy and energy appliances 2. Women and gender issues should be integrated into all facets of the energy service 3. Energy initiatives targeting low-income households should focus on female-headed households 4. Women and youth should be empowered to manage the resource sustainably, as they are more involved in fuelwood collection for subsistence use
Kenya	Draft National Energy Policy	Under cross-cutting issues, recognition of problems facing women: '…women and children in rural areas are spending increasing amounts of time fetching firewood and other biomass fuels leaving little time for other productive activities for women; and limited study-time particularly for the girl child. The prevailing land tenure system also inhibits access to biomass fuels by women. In addition, the use of low quality energy supplies and inefficient conversion devices poses health risks… The challenges are to: 1. Mainstream gender issues in policy formulation and in energy planning, production and use 2. Undertake public education and awareness creation on the cultural structures and practices hindering the access by women to biomass fuel resources 3. Undertake public health education on the efficient use of biomass fuels and 4. Promote the use of fuel efficient cook stoves In human resource development and capacity building: '....there is also a discernible gender imbalance in the management of the energy sector, which is dominated by men.' In energy policies and strategies: Strategies will include 'Take deliberate steps to integrate female gender in the policy formulation and management of the energy sector

Country	Policy Document	Gender Policy Measures
Tanzania	National Energy Policy 2003	Under objectives, 'to provide an input in the development process by establishing efficient energy production, procurement, transportation, distribution, and end-user systems in an environmentally sound manner and with due regard to gender issues,' and 'increase energy education and build gender-balanced capacity in energy planning, implementation and monitoring.' Under energy sector challenges and strategies, 'there is scope for improvement in energy supply to the rural population, especially reducing the burden to women', and 'the energy policy… introduces an institutional focus on improvements of rural and semi-urban energy practices in order to reduce women's workload and to involve them in the problem solving and decision-making processes on energy issues…. The involvement of women at all levels of the sector shall… be prioritised to better utilise available potential competence and capacity.' Under biomass fuels, 'there is a need to promote efficient conversion and end-use energy technologies and practices in order to minimise health hazards, primarily affecting women and children…' Under rural energy, 'energy services have an impact on all rural economic activities, including agriculture, business, social services, gender equality and poverty.' Under cross-cutting issues, 'gender issues in the energy sector need to focus on the energy needs and ownership of resources…' and there is a need to: 1. 'promote gender equality within the energy sub-sectors both on the demand and the supply sides 2. facilitate education and training for women in all energy aspects 3. promote awareness on gender issues concerning men and women's social roles in the energy sector, including training on appropriate technologies 4. promote awareness and advocacy on gender issues in the energy sector.'
Zimbabwe	National Gender Policy	'The provision of energy is not self sufficient therefore it allows for gender inequity. The National Gender Policy therefore aims to formulate gender sensitive policies that enhance equal and equitable participation of women and men in this sector; eradicate occupational segregation as well as making the provision of energy resources gender sensitive.'
	Zimbabwe preparatory process on women in sustainable development (workshop 1998)	Admission at policy level that policy should be more gender and rural sensitive.
	Rural Electrification Master Plan Study of Zimbabwe, 1991	Questionnaire on the Study of Energy Consumption for the Socio-Economic Evaluation of the Feasibility of Rural Electrification: 'For the surrounding households) Who normally meets the following expenses? (Husband=1; Wife=2; Family Account=3; Other (specify) =4…'

These references are positive but also either (a) vague objectives that are difficult to measure, or (b) narrow, practical and welfare-oriented rather than strategic and integrated into a comprehensive gender framework. Welfare objectives usually aims to lighten women's burdens in the short-term, by reducing the amount of time spent collecting firewood for example, while strategic aims – for example a fairer distribution of resources, or equal access to education for girls and boys – move towards greater gender equality. Not only are both needed for successful gender mainstreaming, the lack of clarity about why gender is being incorporated can also lead to confusion during implementation (Clancy and Feenstra, 2004).

As evidence of vagueness in gendered goals, the Botswana Draft White Paper on Energy Policy has strong statements of commitment to gender equity, promising 'sustainable development through the integration of women and gender issues into all facets of the energy provision process', to focus on low income female-headed households, and 'to ensure that energy programmes and projects impact positively on women' (Ministry of Minerals, Energy and Water Resources, 2004). However, no specific measures or activities are included to ensure that these goals are realised. Energy policymakers expressed the view that gender should be incorporated, but their unfamiliarity with the subject made it difficult to formulate specific, measurable objectives and strategies.

In Kenya, although women and gender are not mentioned in the Kenyan Electric Power Act 1997, the Draft Energy Policy (sessional paper no. 4 on energy) makes impressive statements of commitment towards mainstreaming gender in energy planning, production and use, and 'redressing gender imbalance in the management of the energy sector' which is currently dominated by men (Ministry of Energy, 2004a). How these goals are to be translated into practice is, once again, not specified.

In the case of Tanzania, the 'National Energy Policy' aims to establish energy systems in 'an environmentally sound manner and with due regard to gender issues', and to 'build gender-balanced capacity' (Ministry of Energy and Minerals, 2000). Although gender imbalance in planning and decision-making within the energy sector is recognised, the remedies are broad – promote gender equality, facilitate education, and promote awareness and advocacy on gender issues – and lack a specific action plan for implementation. The most tangible one, to give training and incentives for increased female participation as decision-makers at all levels, is merely encouraged rather than stated as a plan.

In Zimbabwe, mention of gender is confined to the National Gender policy document and ignored in energy policy documents entirely. The Zimbabwe Draft National Energy Policy, the Electricity White Paper on Electricity Reform, the Rural Electrification Policy and Planning Document, the Rural Electrification Masterplan and the Extended Rural Electrification Programme do not mention gender at all (Ministry of Energy and Power Development, 2000; Department of Energy 1991a; 1991b; 1991c; 1991d). The National Gender Policy acknowledges the need for 'gender sensitive policies that enhance equal and equitable participation of women and men in this sector', but it does not have sectoral strategies in place in order to address the shortcomings of the energy policy (Ministry of Youth Development & Employment Creation, undated). The Department of Energy Resources and the utility (ZESA) participated in the Zimbabwe Preparatory Process on Women in Sustainable Energy, spearheaded by ENERGIA and ELCI in 1998, and a commitment was made to formulate programmes with a better gender balance. Despite this, the 2000 Draft National Energy Policy contains no gender-specific policy measures.

Where specific gender issues are raised in these various policy documents, the issues or commitments are not related to mainstreaming gender in a broad sense. The policies lack an integrated framework and merely detail the need to meet narrow welfare and practical needs, ignoring women's strategic and longer-term interests. Botswana's Draft White Paper on Energy Policy acknowledges women's roles 'as energy users and in some instances collectors (particularly traditional fuels)' and the problems caused for women by fuel scarcities (Ministry of Minerals, Energy and Water Resources, 2004). Unfortunately, concrete actions to overcome these problems, or encourage a more equitable sharing of fuel collection tasks within the household, are not planned.

In the Kenyan Draft Energy Policy the 'cross-cutting issues' include a section about how the production and use of biomass fuels is the responsibility of women and children (Ministry of Energy, 2004a). Diminishing supplies, and the prevailing system of land tenure, inhibit access to biomass fuels by women – thereby reducing production and access to education – and the poor energy quality exacerbates health risks. The concrete proposals for addressing these problems are threefold:

1. undertake public education on the cultural structures and practices hindering the access of women to biomass fuel resources;
2. public health education on the efficient use of biomass fuels;
3. promoting fuel efficient biomass cook stoves.

However, this approach is of limited use in meeting gender mainstreaming goals. The lack of access is mistakenly blamed on cultural, rather than environmental and political, causes. Also this piecemeal approach is unlikely to lead to any more than welfare-oriented benefits, such as reducing fuelwood collection time, for women. While the importance of this should not be underestimated, on its own it will not result in their stated aim of mainstreaming gender in energy planning, production and use.

Similarly, the tangible measures proposed in the Tanzanian National Energy Policy seek to reduce women's workload and health hazards through more efficient energy practices and alternative energy sources. A more integrated approach is implied when statements are made about increasing women's participation in energy-related education, training, programmes/projects, planning, decision-making and energy policy implementation. However, no detailed plans are outlined and stakeholders are merely 'encouraged' rather than obliged to work towards this goal.

In the Zimbabwean policy documents, women's participation in the power sector is assumed rather than mentioned explicitly. For example, the Extended Rural Electrification Programme identifies grinding mills, welding machines, sewing and knitting machines, and peanut butter making machines as some of the electricity end-uses. This implies that women are involved. However, there is no explicit mention of women or gender in the programme documents.

At the level of policy documents in the four countries the inclusion of women's practical needs has been achieved, but their strategic needs have not yet been addressed. The following table summarises the review of the national policy documents in the four countries:

Table 2.2: Summary of the gender dimension in national energy policy documents

Country and Summary of Gender Policy	Number of Times Gender/Women is Mentioned	Number of Gender Specific Policy Statements/Measures
Botswana Strong statements of commitment to gender equity. Acknowledges women's roles and problems but no framework to address them.	Gender (5) Women (14)	Policy statements (1) Policy measures (1)
Kenya Strong statements of commitment to redressing gender imbalance. Limited educational and welfare goals planned.	Gender (6) Women (6)	Policy statements (0) Policy measure (1)
Tanzania Strong statements of commitment to gender equality. Welfare measures planned. Participation of women encouraged but not required.	Gender (11) Women (16) Female (1)	Policy statements (5) Policy measures (0)
Zimbabwe Limited mention of gender issues in energy documents. No explicit policy measures to address gender issues or women's interests.	Gender (0) Women (0)	Policy statement (1) Policy measures (0)

2.2 Ideal power sector policymaking process

In most African countries, the power sector policymaking process is not isolated from the overall energy policymaking process. The initial literature review highlighted that the overall energy policymaking process is the same as the one used when developing the different energy sub-sector policies (electricity, petroleum & gas, and renewables & energy efficiency). The key differences are the energy resource in question and the stakeholders involved. This section therefore discusses the ideal energy policymaking process.

An essential part of the process of mainstreaming gender is to ensure that both women's practical and strategic interests are represented during policy formulation. This will involve the direct representation of women's interests by individual women users and producers themselves, as well as indirect representation by elected representatives, representative community-based groups, non-government organisations and researchers. The ideal entry points for researchers to influence the policymaking process include the following[2]:

1. ***problem identification***: challenges, new developmental thrusts, policy gaps including gender mainstreaming;
2. ***problem definition and recognition of needs/interests***: identification of underlying causes using participatory approaches with all stakeholders;
3. ***policy formulation***: identification of possible solutions, consideration of alternatives, analysis of implications and selection of appropriate policy, production of draft policy;

[2] This has been adapted from SEAGA framework as cited by Clancy and Feenstra, 2004, p3.

4. ***stakeholder consultations***: reporting back and getting feedback from stakeholders through questionnaires, meetings, working together;
5. ***final draft policy formulation***: final policy draft is prepared and submitted through the formal channels;
6. ***implementing policies***: this entails putting into practice detailed plans with clear roles and responsibilities;
7. ***annual review process***: involving all stakeholders

In each policymaking step, consideration has to be given to how decisions will impact differently on various subgroups of the population – including women, men, girl and boy children – and on the relationships between them. This requires using datasets disaggregated by gender and other social and economic variables. Policymakers often have limited knowledge and information, especially about how to mainstream gender, which opens up opportunities for stakeholders and researchers to assist in, or influence, the policy development process.

An engendered energy policy would achieve the following:

- Recognise that women and men have different energy dynamics (roles in the household, decision-making areas, energy needs, responses to crises or coping mechanisms, access to resources);

- Make available energy technologies and services that match those dynamics;

- Explore options and engage in public education to reform the unequal distribution of energy decision-making, workloads and resources;

- Employ policy instruments (such as taxation) to provide an enabling environment.

Annecke has proposed that a gender-sensitive energy policy should contain five characteristics (as cited by Clancy and Feenstra, 2004):

1. *Access*: intra-community and inter-household relationships may determine access to energy services. These may not be the same for all women or men in the community, and is one of the areas where the differences between genders may be visible. The status, income, age and life-cycle stage (whether people have children, are employed or are sick), as well as individual relationships, may affect access.

2. *Availability*: women and men should be able to select energy services according to their own criteria and energy policy should ensure a full range of services are available.

3. *Affordability*: by definition, poor women and men have small, often irregular cash incomes and multiple demands on this income, and their choices are constrained by what they can afford. Pricing policies should reflect the reality of low-income households' cash flow levels and patterns.

4. *Security and safety*: There are two aspects of security: (a) women need energy for cooking and income-generating activities. In the face of fuel shortages they cannot prepare food and purify water for themselves and their families, or generate enough income (if energy is a significant input into their enterprises), (b) women (and other household members) need a safe environment for collecting and using fuel, secure

from the negative health impacts arising from indoor air pollution.

5. *Sustainability*: the energy services available to men and women should not only be secure, affordable, accessible and available but also sustainable over time. Energy policy should not only promote the sustainable use of energy but also raise public awareness about sustainable energy.

Feenstra (2002) identified the prerequisites for engendering energy policy within six frameworks:

1. Participatory framework;
2. Methodological framework;
3. Legal framework;
4. Political framework;
5. Institutional framework;
6. Financial framework.

The first condition is the existence of a ***participatory framework***. When involving beneficiaries in public policy formulation – whereby stakeholders including government, development organisations, the private sector and civil society organisations enter into dialogue – efforts have to be made to ensure that women's voices be heard.

A second condition is the existence of a ***methodological framework*** which entails the collection, analysis and publication of gender-disaggregated data. Such data are necessary in order for policymakers to design strategies for overcoming gender inequalities and meeting the needs of both women and men. Different actors may contribute to developing this methodological framework such as universities, bureaus of statistics, NGOs and newspapers. The process of data collection and gender analysis itself creates gender awareness among stakeholders, thereby increasing their knowledge of gender differences and inequalities. Furthermore, it is also essential for monitoring and evaluation.

The first step for a government aiming to equalise opportunities for women and men is to modify the ***legal framework*** and ensure that men and women are equal under the constitution and before the law. Part of this legal framework is the legal and political commitment of governments to international conventions. Did the countries concerned sign and ratify the Convention on Elimination of all forms of Discrimination against Women (CEDAW) and did they participate in the Beijing Platform of Action? Are they meeting their obligations?

The fourth condition that needs to be fulfilled in order to realise gender-mainstreaming is the establishment of a ***political framework*** for using targeting measures to narrow the gender gap. The existence of a National Gender Policy that encourages gender-mainstreaming at all governmental levels and in all sectors is a demonstration of a political commitment towards achieving gender equality.

To implement the political framework and to monitor the legal framework, an ***institutional framework*** for gender issues needs to be established. For example, the creation of a Ministry for Women's Affairs, a Gender Ministry or assigning responsibilities at a senior level within Ministries or Departments are options for gender mainstreaming at the institutional level.

Finally, a ***financial framework*** that allocates sufficient resources to gender policies is crucial for realising gender-aware policies and to demonstrate political commitment to gender mainstreaming. Gender budgeting is an option that gives governments the opportunity to

redirect public policies and expenditure to promote gender equality. Government budgets should be gender disaggregated. In principle, public expenditure on social services and infrastructure are allocated on a gender-neutral basis but, in practice, women and men use services differently.

These frameworks should be seen as a trajectory towards creating an enabling environment. The process of establishing the frameworks will require the representation of women's interests throughout. Clancy and Feenstra (2004) point out that gender mainstreaming involves more that making sure that the needs and interests of both women and men are considered at all stages of planning, policymaking and implementation, and that policymakers are aware of gendered roles and responsibilities. It is also necessary to reform that process of policy formulation and implementation so that women's interests are more fully represented. As users and producers, women's views and demands need to be centre-stage, either directly or indirectly through representatives. In the longer term, women also need to be better represented in science, research and policymaking institutions.

2.3 Actual power sector policymaking process

To date, policymaking in the energy sector in sub-Saharan Africa has been male dominated and has involved insufficient consultation with end users and producers. The result has been that women's needs and interests have suffered neglect. For example, in Zimbabwe there has not been any deliberate effort to include women in the selection process of members of the governmental and consultative policymaking bodies. The best representation by women achieved was 25%. No women's organisations were involved in the stakeholder consultation processes that were undertaken before drafting policy documents. However, two women's organisations[3] attended the consultation process for the revised National Energy Policy.

In Botswana, households were ignored during consultations held to help develop national energy policy although private sector energy users were included. The newly-formed Gender and Energy Network of Botswana was asked to review the energy plan from a gender perspective but did not have the time or capacity to do so in time. The Women's Affairs Department received a copy but, perhaps due to their lack energy knowledge, they made no comments. End users took part in consultation workshops in 2004, but the existing structure of local-level political institutions is currently underused in Botswana. The system of the *kgotla*, or traditional public meeting place, could be better utilised to both gather views from the grassroots, including those of women, as well as sensitise people to energy issues, options and technologies. The Botswana case study found that neither policymakers, nor researchers acting as intermediaries between policymakers and people at the grassroots, make enough use of these public meetings.

Power sector policymaking in Tanzania is undertaken at three levels: government, central (the Headquarters of TANESCO) and departmental. At the government level, the Department of Energy at the Ministry of Energy and Minerals is responsible for developing energy policy, in collaboration with various stakeholders. There are 72 members of the Department, nine of whom are female. At the central level, policy formulation and decision-making is the responsibility of the TANESCO Board of Directors and top management. Two of the ten directors and managers are female. At the departmental level, the TANESCO directors are responsible for policy formulation and decision-making. There are 41 directors, two of whom are female.

[3] The two organisations are: Association of Women's clubs and Zimbabwe Women's Bureau

The process in Tanzania involved consultations with government, the private sector and NGOs rather than with end users or producers. In 1992, the Ministry of Energy and Minerals, and a Swedish consultancy agency, led the process of a review for the 1992 National Energy Policy. This encompassed a number of activities including a review of former policy, sub-sector assessments, consultative meetings with stakeholders, workshops, an audience with a Member of Parliament, and sharing regional experiences. Although participatory, women were under represented in the review process at all levels.

The policymaking process in Kenya is also driven by the Ministry of Energy. During the development of the Draft National Energy Policy, task forces were formed by the Ministry to look into those aspects of the legislation that were seen as deficient or requiring elaboration. Members were selected according to their technical expertise rather than their knowledge about particular interest groups. An attempt was made to seek wider stakeholder participation through a public consultative forum. This forum was advertised in the national media and allowed stakeholders to participate in a discussion of the draft policy which would have an influence on the subsequent reports. However, the reports themselves reveal that the process only allowed limited incorporation of women's needs and interests.

The policymaking processes in the four countries have in common an inadequate process of consultation. There were other similarities. In all four case studies the process of policymaking was driven by the government sector, more specifically by the Departments or Ministries of Energy. They all held stakeholder workshops, although their size, composition and inclusion or exclusion of women varied:

- Zimbabwe conducted study tours, working group meetings, and two national workshops;

- Botswana held both mini-workshops on various sub-sectors and a major workshop for key energy stakeholders;

- Tanzania held a series of workshops for a range of stakeholders as well as inter-ministerial discussions, meetings with members of parliament and regional information sharing;

- Kenya sought wide stakeholder participation through their widely advertised public consultative forum.

The major influences that shaped the policymaking processes varied from country to country and these are described in the next section. They, as well as other similarities and differences, are summarised in the table below:

Table 2.3: Influences on policymaking processes

	Botswana	Kenya	Tanzania	Zimbabwe
Driver	Department of Energy	Ministry of Energy	Department of Energy	Department of Energy
Key Influences	• Need to have a document that would guide and facilitate proper planning and management of the energy sector • Consultancy work	• Deficiencies in Electric Act • Need for consistent policy on energy • Electricity rationing and outages • Adverse effects of oil importation on economy and balance of payments	• Transformation in energy sector since 1992 necessitated revision of energy policy document • Changes in global power sector	• Existing policy had some gaps • Energy specialists and consultants • The World Bank
Consultation Tools	• Consultation with stakeholders • Mini-workshops • Major stakeholder workshops	• Taskforces appointed by the Ministry of Energy • Stakeholder workshops • Public consultative forum	• Stakeholder workshops • Inter-ministerial discussions	• Taskforces • National stakeholder workshops

3 Gender research influences on power sector policy

The four case studies illustrate that the direct influence of research, and especially gender research, on power sector policy formulation has been limited. Firstly, the significance of external factors – that is, circumstances beyond the control of researchers and policymaking – were highlighted in the cases of Tanzania and Kenya. Global changes have had profound effects on the power sector, particularly:

- The impact of climatic change and variability,
- Various action plans emerging after the Rio conference,
- Change in policy in other countries (e.g., privatisation in the Soviet Union and the United Kingdom),
- Multilateral donors' shifts in approach, requiring utilities to operate on commercial principles as a condition for lending and to restructure so that they are more attractive to private investment,
- Dwindling official development assistance.

It is clear that the policymaking process, and the influence of research upon it, have to be understood within the context of national change as well as global pressures. Within Kenya, the adverse effect of oil importation on the domestic economy, the worsening balance of payments, economic stagnation, rising population, and electricity rationing and outages are given as examples of a changing domestic situation. In Tanzania, national changes such as technological advances that allow new and smaller entrants to produce power below the average costs of established utilities as well as the spreading enthusiasm for private ownership, and the introduction of competition as a substitute for regulation, combine to have a significant impact on the power sector.

Although the impact of research has been limited, examples of the influence of research were found in all four case studies. In Kenya, in 1995, the Ministry of Energy (MoE) engaged an American legal consultant, Steptoe and Johnson, in conjunction with a local legal firm M/S Oraro and Rachier Advocates, to review the Electricity Laws of Kenya [Cap 314], and develop an appropriate legal and institutional framework for the energy sector in Kenya. The recommendations culminated in the Electric Power Act [1997] that was enacted in November 1997 and became operational on January 9, 1998. In 1996, the Government engaged a consultant, Electricity de France (EDF), to carry out a sub-sector reorganisation study and make recommendations to achieve the objectives of the reforms. The KPLC initiated market research to understand how customers used electricity, identify what energy saving equipment was currently available, and elicit customers' perceptions of services. However, no evidence of any gender-specific research that has had an impact on policy was found. Customers were only classified by the tariff they were on, rather than by gender.

In contrast, the Tanzanian National Energy Policy does seem to have been shaped in part by research. This is not surprising bearing in mind that the influential 'background papers' were prepared by Swedish consultants employed by one of the government's donors – SIDA. The policy document reflected various recommendations made by the researchers, including (a) the setting up of an autonomous regulatory body, and (b) a commitment to consider the different roles played by women and men in the energy sector. Perhaps to an extent as a result of the researchers' advice to pay careful attention to gender, the National Energy Policy stipulates that it will promote gender equality both in demand and supply, facilitate education and training for women, promote awareness on men's and women's social roles and give training on appropriate technologies. However, the major shift in governmental approach to

energy – whereby the government's role in the urban energy sector will be taken over by the private sector – appears to have emerged out of political and ideological change rather than research.

In Botswana too, the relationship between policymakers and researchers is important if erratic. The government of Botswana has ample financial resources and has historically been receptive to external advice. For policymaking purposes, experts are typically engaged to ensure that policy combines international 'best practice' with the specifics of the Botswana context. Such consultancies have included original research work, including conducting surveys on energy use, which indicates a willingness among policymakers to be guided by expert and informed advice.

Policymakers and researchers met recently at a policy seminar, and the Botswana Energy Masterplan cites sixty-six research references, including both regional and international research material. This was a crucial part of the process and had a lot of influence on the final product (the energy policy). The seminar in question was a one-off event and there is no document or established procedure that directs the Department of Energy to work with researchers, or provides guidance on how this should be done. Unless it is institutionalised, this relationship may not last.

Furthermore, the Department of Energy has relied on consultants' studies to inform their policy formulation and implementation. The DoE often commissions such studies, sometimes including survey work; for example, they commissioned research before making a decision about PV electrification and a review of an earlier energy master plan during policy formulation. In the latter case, the researchers reported to a national steering committee of energy stakeholders including government departments, research and development organisations and representatives from mines. However, there is no formal procedure or guidance to ensure that such relationships last. While much of this involved collecting existing information there was still a substantial research element. Academic research as a basis for policy formulation has yet to gain ground in Botswana, and the energy sector is no exception. The influence of the consultants who carried out work in preparation for drafting the energy policy was limited because they were bound by their terms of reference.

While gender was seen as a 'socially correct item' that should be added to policy because (a) other countries in the region paid attention to gender, and (b) energy and global trends also showed that gender and women could no longer be ignored, the influence of gender research was limited.

Research has had a highly specific influence on the policymaking process in Zimbabwe. However, research has largely ignored gender and been used in general to design efficient strategies rather than goals. In the case of rural electrification polices, research has been commissioned to correct implementation problems that arose when the expected outcomes from policy were not realised. A notable exception was the research work that led to the formulation of the rural electrification policy document in which a socioeconomic evaluation questionnaire was administered. Some of the questions addressed gender-differentiated responsibilities and purchasing power. The purpose was to recommend appropriate pricing mechanisms and other financial incentives. With regard to the Electrification Masterplan and Extended Rural Electrification Programme, research was mainly carried out to guide the selection of projects and to ensure the viability of the programmes, but not to guide the formulation of policy on electrifying rural areas.

In preparation for the Electricity White Paper in 1998, a multidisciplinary Task Force comprising of officials from the Ministry of Transport and Energy, ZESA, National Economic Planning Commission and the Attorney General's Office was formed. The Task Force was mandated to undertake a study tour to look at regulatory bodies in other countries – United Kingdom, Norway, Bolivia and South Africa – and come up with recommendations about the ideal structure for the Zimbabwean Electricity Regulator. Involvement of local interest groups was achieved through stakeholder consultations. The focus was on the Office of the Regulator, rather than wider reform, and the emphasis in the research effort had more to do with the experiences of other countries than the needs of communities and grassroots women and men in Zimbabwe.

Interviews held with policymakers in Zimbabwe revealed that the World Bank and energy specialists/consultants have influenced the policymaking process to a certain extent. The World Bank ideas on power sector reform, and the experiences of other countries, influenced the policy formulation process more than voices from the grassroots. The energy specialists/consultants, both external and internal, influenced the policymaking process by facilitating consultations between stakeholders, building consensus between stakeholders, and compiling draft policy documents.

Despite these influences, the researchers usually had little control over outcomes in Zimbabwe. The Ministry of Transport and Energy was firmly in control of the Rural Electrification Policy and Planning Document and the Rural Electrification Masterplan. They defined the Terms of Reference for research and decided how to use the results in the selection of projects and in the implementation process. The researchers had no control over the Electricity White Paper even if their findings had some influence over its content. The World Bank co-opted a Regulatory Advisory Team of experts – namely a restructuring specialist, a regulatory specialist, financial modelling and tariff analysts and a regulatory practitioner. In addition, there were also multidisciplinary working groups who influenced the final outcome of the White Paper. However, only recommendations that were acceptable to the government shaped the final outcome. Similarly the Zimbabwean Extended Rural Electrification Programme has made extensive use of research. However, because rural electrification plays an important catalytic role in the country's agrarian reform programme, the extensive links between policymakers (represented by the Rural Electrification Agency) and other institutions (such as Provincial Administration, Rural District Councils, Land Committee members, rural schools, clinics and development agencies/organisations, each with their own set of interests and agendas, mean that the influence of research is limited.

4 What role can gender research play in influencing power sector policy?

Policymaking entails negotiation between the competing knowledge and interests of those controlled by and influencing the process. Specialists in knowledge generation – researchers – do not always manage to get their evidence heard, let alone translated into policy, and useful knowledge is not necessarily accessible to the policymakers when they need it. Research does not influence policy with a linear causality between the two; rather it works by the circulation and percolation of ideas and concepts whereby research knowledge creeps into deliberations (Crewe and Young, 2002, p5). This does not mean that the process is utterly chaotic because patterns can be found. It seems likely that researchers can have a more effective impact on the policy process if:

- ***Context***: They plan a strategy that is based upon a thorough understanding of: external influences, such as globalisation processes and donor policies; the national political and vested interests and institutional pressures; the attitudes and incentives among officials, their room for manoeuvre, local history and power relations; and the windows of opportunity.

- ***Evidence***: the key messages are relevant, credible and convincing. The research has to provide solutions rather than pose puzzles. The acquisition of knowledge, the way it is substantiated, and its presentation and dissemination, will all affect whether it leaves a lasting impression and changes people's ideas or behaviour. As marketing demonstrates, people can be as influenced by the packaging of a product as by its content.

- ***Links***: appropriate links, alliances and 'chains of legitimacy' are created between beneficiaries, researchers, NGOs, policymakers and other stakeholders. Face-to-face contact, personal relationships, trust, the perception of legitimacy, and formal and informal networks all play a significant part in influencing the policy process (Crewe and Young, 2002; ODI, 2004).

Recommendations about how gender research can influence power sector policymaking in Botswana, Kenya, Tanzania and Zimbabwe can be divided into these three categories: context, links and evidence.[4]

4.1 Context: gendered politics, institutions and global influences

In motivating policymakers to engender energy policy, it is worth considering the underlying principles that can support gender mainstreaming. Skutsch et al (1998) classify them as follows:

- ***welfare***: to increase women's welfare by lightening their daily burdens (but not to change their roles structurally or to open new doors for them), for example, through more fuel efficient stoves;

[4] This framework was developed by Crewe and Young at ODI and later adapted by the Global Development Network into four categories: www.gdnet.org/rapnet/research/methodologies/Phase_II_Methodol.html, accessed July 28th 2005.

- ***empowerment***: to transform women's lives by creating greater self-reliance in all aspects of life or by increasing their position of power, for example, by supporting women to find ways to expand their technology options or increasing women's representation in policymaking bodies;

- ***equality/equity***: to bring about a fairer distribution of rights, power and resources between men and women, such as by campaigning for a more equal sharing of household energy-related work between women and men;

- ***efficiency***: to take better account of the different perspectives, needs and constraints of women and men to ensure more effective management and project delivery, e.g., by researching women's and men's energy needs and ensuring that both articulate their concerns during planning;

- ***anti-poverty***: to ensure that poor women increase their productivity and improve their quality of life, such as by offering alternative fuels, appliances, or strategies for fuel conservation.

(Adapted from Skutsch, 1998 as quoted by Clancy and Feenstra, 2004, p11).

Various stakeholders participate with different rationales for supporting or opposing gender mainstreaming. In general, there is a tendency for private sector companies to be motivated by efficiency, NGOs to focus on equity, empowerment or anti-poverty, while governments tend towards a welfare approach. However, this is not necessarily the case. In Tunisia, the government's rural electrification programme had gender equality as one of its aims and this led to impacts that met women's strategic interests such as: electricity for health clinics that focused on family planning, better access to information about their political rights, and improved opportunities for income generation (Cecelski *et al.,* 2001). Furthermore, within an institution, including government departments and ministries, several rationales for engendering energy policy can exist simultaneously. These conflicts are less likely to impede gender mainstreaming if motives are transparent and openly discussed.

An obvious strategy for rallying around a shared principle underpinning gender mainstreaming is to focus on international agreements. A strong case for engendering energy policy can be made where countries have signed the CEDAW and the Beijing Platform for Action. Similarly, the case for gender mainstreaming can be powerfully made on the grounds that engendered energy projects can more successfully meet the MDGs. For example, if the likely impact of expanding energy options is disaggregated by gender, then it will be clear whether reducing workloads will enable girl children to stay on at school for longer.

At the institutional level, it is clear from all four case studies that awareness creation about engendering energy policy is required. Whether already receptive to the idea of a more integrated gender policy but lacking strategies, as is evident in Botswana, or not yet fully convinced of the need for a gendered energy policy, as appears to be the case elsewhere, training and development is needed on various aspects of gender analysis within policymaking institutions.

National level opportunities for pursuing a gender agenda vary between countries. In Zimbabwe, it can be argued that complying with the National Gender Policy in an integrated way will require an engendered energy policy; a first step would be to provide guidelines on formulating gender-sensitive policies in the power sector. The Extended Rural Electrification Programme also presents opportunities. Since this carries out research at the community level on end uses of electricity, and then designs programme to meet these needs with

concessionary financing arrangements, there is the possibility of influencing this programme to consider women's and men's uses of electricity separately. Both the Rural Electricity Policy and Planning Document and the Extended Rural Electrification Programme also offer the chance to integrate gender into planning[5].

In Botswana, the National Development Plan 9, the energy policy and Vision 2016 all offer opportunities because the government has made commitments to providing services for women in all these policy documents. As a start, the Women's Affairs Department, which has so far not been involved in power sector policy formulation, could be offered sufficient energy training to enable it to engage in dialogue with energy policymakers. Secondly, energy policymakers need training and advice, such as on collecting data disaggregated by gender, and strategies for ensuring that female-headed households are taken into account. Thirdly, relationships between policymakers and gender and energy researchers need to be institutionalised (such as by making better use of the Botswana Gender and Energy Network) so that their commitment to collaboration is formalised.

The Kenyan case study draws attention to the importance of timing when looking for entry points to influence policymaking. For example, it is important to lobby, cultivate and influence parliamentarians before a draft bill concerning energy goes to parliament. Researchers need to be well-informed about opportunities presented by crises and policy changes made at all levels from multilateral donors to communities at the grassroots.

Understanding and responding to local, political, institutional, national and global pressures and opportunities is only part of a successful strategy for influencing policymakers. Researchers also need to establish credibility and legitimacy through convincing, useful and well-delivered **evidence** and appropriate **links**.

4.2 Evidence on gender: credibility and communication

A critical question for researchers to ask is what evidence is required: (a) for motivating policymakers to engender energy policy, and (b) for the actual process of integrating gender into energy planning and implementation? An important tool for achieving both, as identified in all four case studies, is the collection of gender-disaggregated data. For example, assessing the impact of fuel shortages on women and men separately reveals gender inequalities within workloads and access to education that may make policymakers realise that energy interventions have the potential to contribute to gender equality. When they are weighing up the benefits of different options, gender can only be integrated if their impacts on both women and men are known.

Research in Botswana demonstrates the importance of not only disaggregating data, but of also taking into account the complexity of relationships within households. Although women perceived themselves to be the decision-makers in terms of energy acquisition, they relied on men for funds to purchase fuels and appliances. In Tanzania, researchers, when they tried to find out whether electricity enables women or men to produce income for the household, discovered that price is the most important determinant for women's access to power. Thus, a gender-sensitive scheme would research into low cost electrification packages. The Tanzanian case study also indicates that alternative energy sources that reduce girls' household work and so allow them to stay in school longer also deserve more attention from

[5] The two programmes currently undertake market surveys and pilot studies. These could be designed to reflect gender-differentiated electricity needs and concerns.

researchers. Thus, while the general principle of disaggregating data by gender can be made for all countries, the resulting data will vary across nations and localities.

The Zimbabwe case study indicates the importance of integrating gender when planning power sector reform. Aspects that have so far been ignored, and deserve attention, include investigating how to create an enabling environment to attract new investors as well as how to formulate policies that result in equal and equitable involvement of women and men in the power sector. Since power sector reform is ongoing in all four countries, it is likely that consideration of how it impacts differently on women and men, girls and boys, will be necessary in all cases. Once again, the impact may vary but the usefulness of disaggregating data on the effects of reforms holds true for all four countries.

Gender-disaggregated data should not tempt researchers to assume that women and men are homogeneous groups. Within each category, vast differences are found as a result of age, class, household structure, urban/rural residence, and so on. Thus, another aspect of collecting appropriate information for a gender-sensitive power sector (and energy) policy in any country will be to distinguish between different groups of men and women as well as between male- and female-headed households.

Timely, relevant and practical information that can motivate or help solve problems will aid the process of influencing policymakers. Even so, it may be ignored if not packaged and presented in appropriate ways. The research from Botswana points to the need to package results in a more 'policymaker-friendly' manner. Clear and informed guidance should be presented in simplified and non-technical language. Many people, including policymakers, find the concept of gender intimidating or mystifying - accessible language and formats are needed. The Kenya case study stressed the advantages of a multimedia strategy, using different communication channels for different audiences. Academics have relied too heavily on scholarly publications when trying to influence policymakers. Public consultations, publicity in the media (radio, TV, print) and through the internet, mailshots and printed documents all have their place at different times when reaching out to the public, to parliamentarians, to Ministry officials and so on.

4.3 Links, legitimacy and women's representation

Appropriate links have to be forged between the various stakeholders before gender can be integrated into the power sector. Firstly, because policymakers will not take any notice of researchers advocating a gender agenda if they do so entirely from a distance. Secondly, since the power sector has been male-dominated to date the representation of women's interests will require the fuller participation of women in decision-making processes on various levels. All four case studies emphasised the need for improving women's representation: in the overall energy sector, the power sector, in task forces, in intermediate bodies, and in policymaking bodies.

The Tanzania case study points out that successful energy programmes that increase the opportunities for girls to attain a high standard of education will eventually lead to women's better representation in various sectors, including in energy policymaking institutions. In the Zimbabwean case, not many women were involved in the formulation of the power sector reform policy because very few women occupy top positions in the institutions that were involved. The total exclusion of women's representatives from the consultative process led to a neglect of women's interests. A deliberate effort is recommended to raise the status of women in the power sector policy planning process and also that training be offered to them

in policy formulation and gender mainstreaming. More women should be encouraged to enter technical fields such as electrical engineering.

The Kenyan research highlighted the need for better direct representation of women in two locations: (a) parliament - since their concerns will only be taken seriously once the number of women parliamentarians increases; (b) on task forces - where they should be mandated to ensure that gender is integrated into all policy documents. Strategies are needed to counter the male resistance that women often face: 'women encounter an unreceptive and aggressive environment where male colleagues ridicule them when they raise gender issues. In other cases, women are faced with a patronising and condescending attitude, often used as a strategy to dismiss or undermine gender-related contributions' (Wamukonya, 2000, p2).

Improving the direct and formal representation of women in policymaking bodies is only one aspect of ensuring that their interests are reflected in planning and implementation. Mechanisms are also needed to ensure that other women stakeholders' views and demands are centre-staged, particularly the poorer women in rural areas who are usually marginalised when it comes to decision-making. No blueprint for women's participation is possible but appropriate strategies should be designed by policymakers – ones that neither waste women's time nor leave them out at critical decision-making points – from the following options:

- Establish structures that formally include women's organisations (for example, ones that represent women at the grassroots) in planning, implementation and evaluation;

- Join and nurture networks that promote the integration of gender into the energy sector;

- Institutionalise relationships with researchers that have legitimate links with women's organisations and/or women stakeholders, and who can act as intermediaries in voicing their concerns.

It is only through a thorough understanding and timely response to the gender context, with credible evidence on gender and energy, and legitimate links with the ultimate beneficiaries that researchers can ensure that women's interests are more fully represented in policymaking.

4.4 Disseminating research findings

The most obvious strategy for increasing the role that gender research can play in influencing power sector policy is for national and local researchers to develop their skills and capacities to analyse context, collect and disseminate data, and improve their links with both the grassroots and with policymakers. In the immediate future, AFREPREN expects the findings of this reaearch to be useful in the following ways:

- The findings from the review of the policymaking documents and processes will expose network members to the gender dimension (or lack thereof) in energy policy documents. This will be achieved by distributing the report findings to the network members.

- The findings from the review of the policymaking processes will enable researchers to identify key contact persons in the energy policymaking process.

- The recommendations on how to influence power sector policy will help AFREPREN in designing its research studies and outputs so that they become more policymaker-friendly (i.e. non-technical and brief) as well as timely.

- The recommendations on how to influence power sector policy suggest various options for using AFREPREN research findings to influence policymakers. These options include using a multimedia strategy (radio, TV and print media) and presenting findings at public consultative forums.

- National policy seminars will be another avenue for disseminating findings in order to create awareness about mainstreaming gender in power sector policy and obtaining feedback on the relevance of the recommendations.

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7 Appendices

7.1 Appendix 1: Background information about Botswana, Kenya, Tanzania, and Zimbabwe

	Botswana	Kenya	Tanzania	Zimbabwe
General				
Land Area (km^2)	581 730	580 000	883 749	391 000
Capital City	Gaborone	Nairobi	Dar es Salaam	Harare
Exchange Rate (Local Currency per US$) - 2002	6.3	78.7	966.6	55.0
Main Economic Activities	Agriculture, Forestry, Fishing, Mining, Manufacturing, Construction	Tourism, Agriculture, Forestry, Manufacturing, Mining, Construction, Commerce	Mining, Agriculture, Commerce, Construction, Tourism	Agriculture, Mining, Manufacturing, Commerce, Forestry, Construction
GDP (million US$) - 2002	7023	10 098	7287	6048
GNP per Capita (US$) - 2002	3010	360	290	470
Population				
Population (millions) - 2002	1.71	31.35	35.18	13
% Female population - 2002	50.2	49.8	50.4	49.9
National Population Growth Rate (%) - 2002	0.6	2.1	1.8	0.6
Population Density (people per km^2) - 2002	3	55	40	34
Population below Poverty Level (%)***	50.1	52.0	35.7	34.9
Energy				
Energy Sources	Biomass, Imported petroleum, Solar, Wind	Geothermal, Hydro, Solar, Biomass, Imported petroleum, Imported coal	Hydro, Coal, Natural gas, Biomass, Imported petroleum	Coal, Imported petroleum, Solar, Biomass, Hydro
Modern Energy Consumption per Capita (kgoe) - 2002	602*	77	34	188
Traditional Energy Consumption per Capita (kgoe) - 2002	196*	281	331	443
Electricity				
Electricity Consumption per Capita (kWh) - 2002	63	104	63	827
Dominant Electricity Utility	Botswana Power Corporation	Kenya Power and Lighting Company	Tanzania Electricity Supply Company	Zimbabwe Electricity Supply Agency
Installed Capacity (MW) - 2002	132	1197	863	1961
Electricity Generation (GWh) - 2002	2170	4563	2918	8587

	Botswana	Kenya	Tanzania	Zimbabwe
System Losses (%) - 2002	9.9	20.5	28.0**	15.1
National Electrification (%) [6]- 2001	24	9	10	40
Rural Electrification (%) - 2001	18	4	2	19
Urban Electrification (%) - 2001	43	42	39	84
Gender				
Gender-related Development Index (GDI)	0.58	0.49	0.40	0.48
Gender empowerment measure (GEM)	0.56	-	-	-
Seats in parliament held by women (% of total)	17.0	7.1	21.4	10.0
Women in government at ministerial level (% of total) 2001	26.7	1.4	-	36.0

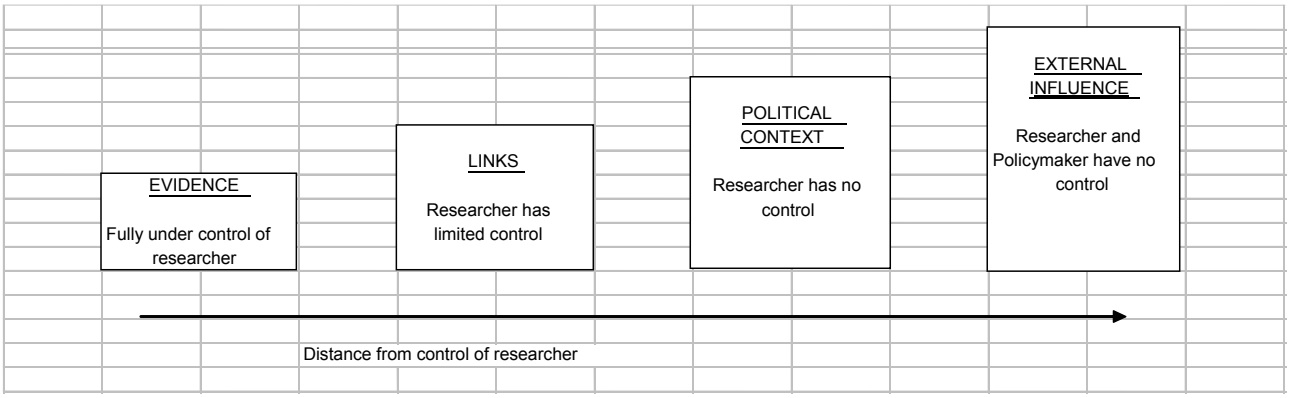
NOTE:
* - 2000 data
** - 2001 data
*** - Data refer to population below national poverty line as per latest survey year. Botswana data refer to population living below US$2 a day.

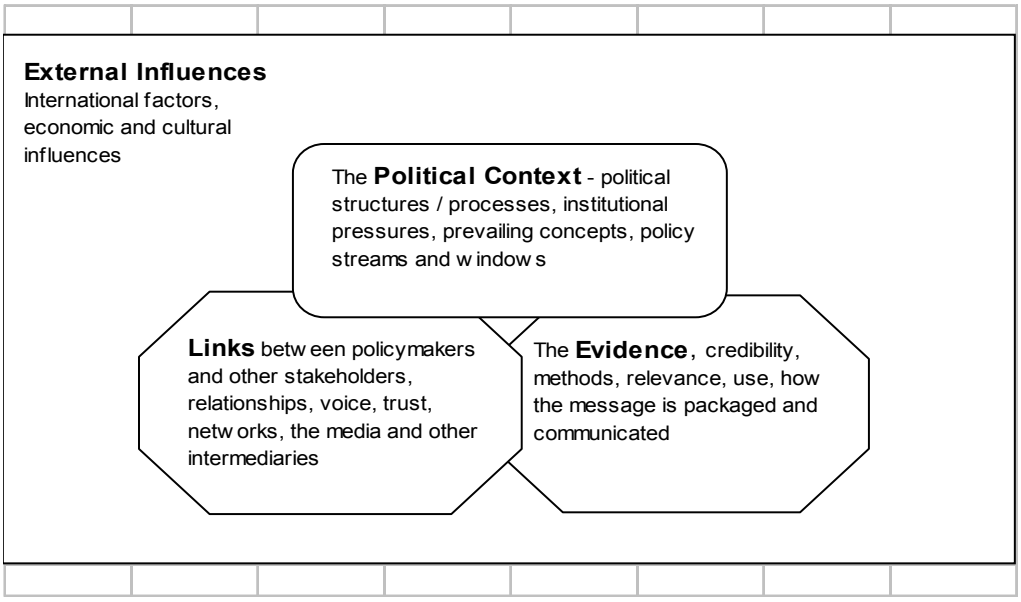
Sources: AFREPREN, 2005 (database); EIU, 2002; IEA, 2004; Karekezi et al., 2002; UNDP, 2004; World Bank, 2004a; World Bank, 2004b

[6] Electrification (%) refer to the percentage of a population or households that are connected to electricity from the grid (assumes a standard average of 5 persons per household).

7.2 Appendix 2: Clusters of influence

The following diagrams illustrate the four clusters of influences identified by the authors and the GDN study on research/policy linkages, and used in the study.





Source: Overseas Development Institute, 2004

7.3 Appendix 3: Extracts from power sector policies mentioning gender in the four case studies

1. Botswana: extracts from power sector policies mentioning gender

Draft National Energy Policy Document

Gender

A

3.1.5 To facilitate gender equity

Gender issues play an important role concerning the choice of energy use especially at household level. Women play an important role as energy users and in some instances collectors (particularly traditional fuels). Women are also affected by the environmental problems of traditional fuels, which include indoor pollution. Despite their important role women continue to be marginalised when it comes formulating policies and programme for provision of modern energy services. There is need for integration of women and gender issues into all facets of the energy service provision process. (Page 4)

B

4.1.1 Low – income households

Income and gender of the household heads influence decisions concerning energy choices and affordability. Studies show that female-headed households were mostly amongst the low-income groups in Botswana. It is would therefore be useful for energy initiatives targeting low- income households to focus on female-headed households. (Page 5)

….Generally women and youth are more involved in fuelwood collection for subsistence use and they need to be empowered to manage the resource sustainably. They also bear the brunt of walking long distances and spending long time fetching fuelwood…. (Page 13)

Women

C

6.12 Women and Energy

Often, energy projects and programmes implemented by energy institutions do not adequately address the energy needs of women. In some cases, these interventions impact negatively on women. Women, in particular rural women still depend on fuelwood as the main source of energy. These women are greatly affected by scarcity of this fuel. As a result, they have to travel long distances to collect the fuelwood and spent more time chopping, bundling and carrying it. This means they cannot fulfil their daily energy requirements. Furthermore, women are often not in a position to make or influence decisions concerning energy use, such as those concerning the acquisition of appliances. (Page 23)

Policy Goal

- *To ensure that energy programmes and projects impact positively on women, the principal users of energy and energy appliances.*

2. Kenya: extracts from power sector policies mentioning gender

Pages 33, 34, 59, of the Draft National Energy Policy.

CHAPTER FIVE (pg 33)
5.0 CROSS CUTTING ISSUES

5.5 Gender

5.5.1 In the traditional society, production and use of biomass fuels is the responsibility of women and children. Men only get involved when these activities get commercialised. Due to diminishing biomass energy supplies, women and children in rural areas are spending increasing amounts of time fetching firewood and other biomass fuels leaving little time for other productive activities for women; and limited study-time particularly for the girl child. The prevailing land tenure system also inhibits access to biomass fuels by women. In addition, the use of low quality energy supplies and inefficient conversion devices poses health risks to women due to indoor air pollution.

5.6 Challenges

5.6.1 The challenges are therefore to:

- Mainstream gender issues in policy formulation and in energy planning, production and use;
- Undertaking public education and awareness creation on the cultural structures and practices hindering the access by women to biomass fuel resources;
- Undertaking public health education on the efficient use of biomass fuels; and,

- Promoting the use of fuel efficient biomass cook stoves.

(Pg 36)

5.15. Human Resource Development and Capacity Building

5.15.1 Technological and policy issues in the energy sector are highly dynamic. There is therefore a need to continuously train and upgrade human resource capacity to keep up with these dynamics. In Kenya's energy sector, specialised research and consultancy services have largely been internationally sourced due to inadequate domestic capacity to undertake such tasks. In addition, specialised training programmes on energy are not available in the country's institutions of higher learning; there is also a discernible gender imbalance in the management of the energy sector, which is dominated by men.

5.16 Challenges

5.16.1 The challenge is therefore to develop appropriate forward looking structures and programmes to address the country's strategic human resource development needs in the energy sector to minimise external dependence. There is also the challenge of redressing the gender imbalance in the management of the energy sector

CHAPTER SIX

6.0 ENERGY POLICIES AND STRATEGIES

6.6.9 Human Resource Development (pg 55)

6.15.5.1 To address the human resource development challenges in the energy sector, the following strategies will be pursed:

- Development and implementation of a comprehensive capacity building programme for the energy sector;
- Provision of adequate budgetary allocations to support capacity building in the energy sector with emphasis on facilitating local professionals to take up more prominent roles in the sector particularly in the realm of research and development and provision of consultancy services;
- Liaison with local training institutions to develop appropriate training curriculum targeting key areas in the energy sector; and
- Promotion of closer collaboration and cooperation on human resource development especially information exchanges with regional Governments and international organisations; and
  Take deliberate steps to integrate female gender in the policy formulation and management of the energy sector.

3. Tanzania: extracts from power sector policies mentioning gender

- Item 1.1.1, pg 1, para 2; 'However, the national policy objective for the development of the energy sector remains to provide an input in the development process by establishing an efficient energy production, procurement, transportation, distribution, and end-user systems in an environmentally sound manner and with due regard to gender issues'.
- Items 1.1.1 (f), pg 2, 'Increase energy education and build gender-balanced capacity in energy planning, implementation and monitoring'.
- Item 2.1 (e), pg 11; 'There is scope for improvement in energy supply to rural population, especially reducing the burden to women, and the reversal of deforestation if energy efficiency is promoted in cooking and lighting'
- Item2.2 (g), pg 14 'Gender issues (Social Role of women and men): "Inferior energy practices, particularly among poor households in rural and semi-urban areas, are mainly affecting women. The search, collection, and use of fuel-wood are associated with heavy and often low-productive time-consuming work, mainly performed by women. The energy policy, therefore, introduces an institutional focus on improvements of rural and semi-urban energy practices in order to reduce women workload and to involve them in the problem solving and decision-making processes on energy issues. Women are under represented on the supply side of commercial energy. The involvement of women at all levels of the sector shall, therefore, be prioritised to better utilise available potential competence and capacity. Training and incentives for increased female participation as decision-makers at all levels need to be encouraged.
- Item 3.2.4., para. 4, pg 33, "There is a need to promote efficient conversion and end-use energy technologies and practices in order to minimise health hazards, primarily affecting women and children, and environmental degradation".
- Item 4, para 1, pg 38, "Energy services have an impact on all rural economic activities, including agriculture, business, social services, gender equality and poverty".
- Policy statement No. 44, pg 39, "Promote application of alternative energy sources other than fuelwood and charcoal, in order to reduce deforestation, indoor health hazards and time spent by rural women in search of firewood".
- Para. I&2: pg 47 and 48, "Gender Issues" and "Gender issues in the energy sector need to focus on the energy needs and ownership of resources. Gender issues should be looked at from both the demand and supply of energy. On the demand side, men and women have different demands on energy, due to existing socio-cultural and traditional roles. On the commercial energy supply, it is clear that women are under-represented at all levels of energy generation, transmission and distribution. There is therefore, a gender imbalance at various levels of planning and decision-making within the energy sector".
- "On the demand side, especially in rural areas, there is a need to relieve women from the burden of searching for energy, especially wood-fuel. All stakeholders within the energy sector need to participate and take deliberate sensitisation actions to encourage women participation in energy related education, training, programmes/projects,

planning, decision-making and energy policy implementation".

- Policy statements No. 60, Promote gender equality within the energy sub-sectors both on demand the and supply
- Policy statements No. 61, Facilitate education and training for women in all energy aspects.
- Policy statements No. 62, Promote awareness on gender issues concerning men and women's social roles in the energy sector, including training on appropriate technologies
- Policy statements No. 63, Promote awareness and advocacy on gender issues in the energy sector.
- Item 5.7.2, pg 50, "A gender balanced human resource development programme for energy sector is important tool in order to ensure the fair provision of training and education. Today, there is a lack of trained and skilled energy experts in the sector, particularly, women…. The present situation is also constrained by cultural and traditional influences, which inhibit gender-balanced training".
- Policy statement No. 65, "Encourage local and foreign investors and other financers in the sector to train Tanzanians in essential skills".

4. Zimbabwe: extracts from power sector policies mentioning gender

A. National Gender Policy, Ministry of Youth Development & Employment Creation, Republic of Zimbabwe

- "The provision of energy is not is not self sufficient therefore it allows for gender inequity. The National Gender Policy therefore aims to formulate gender sensitive policies that enhance equal and equitable participation of women and men in this sector; eradicate occupational segregation as well as making the provision of energy resources gender sensitive"

B. A Report on a Workshop Held in September 1998, The Zimbabwe Preparatory Process on Women in Sustainable Development

- "Admission at policy level that policy should be more gender and rural sensitive", page 5

C. Rural Electrification Master Plan Study of Zimbabwe – Inception Report – 1991, Department of Energy. A Report on a Workshop

Questionnaire on the Study of Energy consumption for the Socio-Economic Evaluation of the Feasibility of Rural electrification:

- "(For the surrounding households) Who normally meets the following expenses?
(Husband=1; Wife=2; Family Account=3; Other (specify)=4…."

7.4 Appendix 4: Questionnaire – the links between gender and policy formulation in Botswana

A.

Male / female

Were you involved in formulating the draft policy **YES** **NO**

If yes what was your area of input
Coordinator of the policy formulation process

Do you think research input is important in policy formulation? **YES** **NO**

If NO, why not?

If yes, did you use any research work during the formulation?
Reports of past studies were taken into consideration and the consultants also interviewed different stakeholders.

At which stage of the policy process was research made use of?
At the beginning.

What kind of research was used (e.g. local energy studies, regional and international researches)
Local energy studies, benchmarking with regional experiences

Which of these types of researches was found useful?
Both

What advantages does research have over other forms of information gathering (e.g. management information, consultative meetings)?'
Research covers a larger area (population) than stakeholder consultations

If research had been available, where would it have been useful?

During which stage of the policy process do you feel research should be used?
I think at the beginning of policy formulation process (and throughout)

Was there any research which was not useful?
No.

Gender and women

Are you aware of the concept of gender? YES NO

In your opinion, what does gender mean?
I know its not about women only.

Is gender important in policy formulation? YES NO

If yes, why?
Policies that considered gender issues benefit both males and females alike.

How do you think gender can be successfully represented in the policy?
By mainstreaming gender issues at the initial stages of policy formulation.

Do you feel women should get special attention/treatment in energy projects/programmes?

Yes

Please explain your answer.
Women, especially African women need special energy programmes because of their cultural responsibilities in the home. They are the ones who see to it that there is something to eat, they are mostly involved in income generating activities to sustain the family. To do all this they use energy.

2. B

Male / Female

Were you involved in formulating the draft policy **YES** **NO**

If yes what was your area of input
Renewable energies

Do you think research input is important in policy formulation? **YES** **NO**

If NO, why not?

If yes, did you use any research work during the formulation?
We did

At which stage of the policy process was research made use of?
Initial stage

What kind of research was used (e.g. local energy studies, regional and international researches)
Local energy studies

Which of these types of researches was found useful?
Local studies

What advantages does research have over other forms of information gathering (e.g. management information, consultative meetings)?'
It is more relaxed and can look at issues in more and wider detail.

If research had been available, where would it have been useful?
At the initial stage of formulation

During which stage of the policy process do you feel research should be used?
Initial Stage

Was there any research which was not useful?
No. Research used was more targeted.

Gender and women

Are you aware of the concept of gender? YES NO

In your opinion, what does gender mean?

Is gender important in policy formulation? YES NO

If yes, why?
Energy usage is not gender balanced

How do you think gender can be successfully represented in the policy?
Putting in place deliberate policy targeting women and poverty.

Do you feel women should get special attention/treatment in energy projects/programmes?
Yes

Please explain your answer.
They are the main users.