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Note!

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Mid-Term Review of the SADC Renewable Energy Support Programme



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List of Acronyms

CBO	Community Based Organisation
CO₂	Carbon Dioxide
DRC	Democratic Republic of Congo
ECOWAS	Economic Community of West African States
EE	Energy Efficiency
EU	European Union
DBSA	Development Bank of Southern Africa
GDP	Gross Domestic Product
GW	Gigawatt
GWh	Gigawatt hour
ICP	International Cooperating Partners
IRENA	International Renewable Energy Association
KWh	Kilowatt hour
LPG	Liquefied Petroleum Gas
M&E	Monitoring and Evaluation
MFA	Ministry for Foreign Affairs of Finland
MTR	Mid-Term Review
MW	Megawatt
MWh	Megawatt hour
MWh/m²/year	Megawatt hours per square metre per year
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Cooperation and Development
R&D	Research and Development
RE	Renewable Energy
RERA	Regional Electricity Regulators Association of Southern Africa
RESAP	Renewable Energy Strategy and Action Plan
RESP	Renewable Energy Support Programme
SADC	Southern African Development Community
SAPP	Southern African Power Pool
SEA	Strategic Environmental Assessment
ToR	Terms of Reference
TWh	Terawatt hour
TWh/y	Terawatt hours per year

Executive Summary

Aims and Objectives of the SADC RE Support Programme

The Southern African Development Community (SADC) and the Ministry for Foreign Affairs of Finland (MFA) commenced co-operation in order to outline options to increase the use of renewable energy in the SADC Region. One concrete output of this co-operation is the Renewable Energy Strategy and Action Plan (RESAP) for SADC Member States. In addition to the development of the Renewable Energy Strategy and Action Plan, the SADC RE Support Programme (RESP) is directing resources to support the Energy Division of SADC in addressing the challenges of RE development in the region. In order to strengthen the capacity of the SADC Secretariat's Energy Unit in the field of renewable energy and energy efficiency, the MFA is supporting the secondment of a Technical Advisor from VTT to provide technical assistance and to assist with the implementation of the RESP.

Purpose of the Mid-Term Review

This report has been compiled by Camco to provide an assessment on the status quo of the RESP, which includes an evaluation of the RESAP document and the overall programme management and implementation. The major goal of the Mid-Term Review is to provide an independent analysis as to whether the programme is on course to meet its overall objectives and to make recommendations in order to enhance the programme and increase its effectiveness for the remaining period of programme implementation. Another objective of the review is to critically assess the impact achieved so far with regard to the objectives and targets of the RESP and RESAP. For the evaluation, a semi-structured meeting with a standardised interview template was used to facilitate the discussions and the information gathering process with targeted stakeholders. Key stakeholders included representatives of key regional institutions, International Cooperating Partners (ICPs) represented in the SADC Energy Thematic Group (ETG) and SADC Member States. The interview template included criteria and questions, in line with the ToR, pertaining to the programme's relevance, efficiency, effectiveness, impact, sustainability, coordination, complementarity, coherence and value added. The criteria and questions contained in the standardised interview template formed the basis for the wider stakeholder engagement process.

Status Quo of the SADC RE Support Programme

Southern African countries have great potential to meet a considerable share of their energy demand with various renewable energy sources but current policies and strategies do not sufficiently support this. There is widespread agreement amongst stakeholders that in order to develop and utilize abundant regional renewable energy resources, limited capacity at the SADC level and the adverse impact this has on the implementation of regional energy programmes needs to be addressed going forward.

Barriers to RE development in the SADC region are due to numerous compounding factors such as inadequate legal and institutional frameworks to support RE, difficulties in accessing financing to support RE market development, capacity and information barriers and lack of political will to support long-term RE planning and integration into regional energy markets. In most cases, RE projects particularly those involving more than one SADC Member State, often take long to get off the ground. This is partly attributed to the challenges associated with cross-border trade as national interests have the tendency to prevail over regional energy needs.

Overall, the bulk of the RESP work thus far has focused on the development and formulation of the RESAP document. However, there has been no implementation of the RESAP and Member States have not approved RESAP or shown particular commitment towards RESP and RESAP. Moreover, the RESP Monitoring and Evaluation System is not in place and consequently, no monitoring and evaluation reports on RESP have been produced. With regard to the progress against overall objectives of the RESP, there's limited evidence suggesting that a succession plan exists to replace technical support once the agreed timelines have lapsed. Nor has there been progress on the establishment of the SADC RE technical committee to convene workshops on different themes and commission studies on RE and EE in the region.

The idea of RESP is welcomed in the region. The major challenge has been in the implementation of the programme. Implementation of both RESP and RESAP will be a key challenge going forward. For instance, RESAP is not presently designed as a strategy as it does not describe the 'how to' of implementation to overcome barriers to RE in the region. As such, roles and responsibilities for all relevant stakeholders both for RESP and RESAP need to be clearly delineated and appropriate timeframes for implementation assigned to each of those responsibilities.

Given limited capacity at SADC, it is optimal for the SADC Energy Division to focus on playing more of a facilitator role than actual implementer of regional interventions. Internal capacity is needed at the secretariat in order to service the requirements of the region. This could be done through the appointment of a permanent focal person to focus on policy planning and advocacy for RE. To this end, the SADC ETG has a role to play in supporting (through a joint collaboration), many of the aims and objectives of the RESP and the RESAP.

Key Recommendations

The issue of whether there are sufficient resources to reformulate RESP and refine RESAP remains in question. However, six key areas of improvement have been identified and they are as follows:

- Stakeholder Engagement,
- Reformulation of RESP,
- Refinement of RESAP,
- Knowledge Management,
- Recruitment for SADC Energy Desk and
- Re-affirmation of the SADC-MFA Co-operation.

It is recommended that the MFA recommence with a reformulation of the RESP and RESAP, in a process that seeks to be as participatory as possible, and involving all key and relevant stakeholders. In order to ensure successful implementation of the RESP, regular and on-going stakeholder engagement is critical in establishing buy-in and raising the profile of the RESP in the region.

1 Background and Methodology

The Southern African Development Community (SADC) and Ministry for Foreign Affairs of Finland (MFA) have initiated co-operation with the aim of developing and utilising the abundant renewable energy (RE) opportunities available within the SADC region. In order to strengthen capacity in the renewable energy field within the SADC Secretariat's Energy Unit, the MFA has partnered with SADC through the implementation of a Renewable Energy Support Programme (RESP). A key outcome of this Renewable Energy Support Programme ('the programme') is the development of a Renewable Energy Strategy and Action Plan (RESAP) for the SADC region.

In order to evaluate the current progress of the programme and its various components, the MFA has commissioned Camco to undertake a mid-term review (MTR) of the RESP. The key outcome of the MTR is to provide a critical, independent analysis as to whether the programme is on course to meet its overall objectives, as well as to make recommendations to enhance the RESP and increase its effectiveness.

The MTR of the current RESP incorporates a review of the following components:

- The RESP programme document
- The current RESAP document (March 2012 version); and
- The current state of overall programme management and implementation

This document has been prepared following a series of one to one interviews with key relevant stakeholders in the SADC energy sector, represented by regional institutions, national energy ministries and International Cooperating Partners (ICPs). A total number of 28 participants, representative of 19 institutions currently active in the SADC energy sector, were interviewed out of a possible 25 institutions targeted and identified by the MFA. Attempts were made to solicit responses from all the relevant stakeholders. However, no responses were received from some stakeholders which in itself, is a finding of the review. For a detailed list of stakeholders consulted please refer to Annex 1. The framework questionnaire used to conduct the stakeholder consultations is contained in Annex 2.

Interviews with the relevant stakeholders were held during the period starting June 2012 ending October 2012. In order to solicit responses from the relevant stakeholders, the following methods were employed: physical meetings to conduct face-to-face interviews, telephonic interviews, and written comments were provided where feasible. A detailed outline of the evaluation framework and approach employed for the assessment is provided in Annex 3.

2 Current State of Affairs in the SADC Energy Sector

2.1 The SADC Energy Policy Landscape

In the past decade, the SADC energy sector has experienced both challenges and opportunities with regard to renewable energy development. Diminishing power generation capacity, in the context of escalating demand, has resulted in major power shortages across the region. This context has highlighted the need for Southern Africa to explore opportunities to supplement the current energy supply deficit through the use of renewable energy sources.

SADC Member States have acknowledged the benefits associated with renewable energy development at various junctures. However, at present, low levels of RE penetration and use

across the region are largely attributed to a lack of effective legislative and regulatory frameworks that would support market development¹. In addition, there are limited institutional mechanisms and technical capacity at all levels (i.e. local expertise and governmental capacity) to successfully implement RE programmes and projects².

2.1.1 Key Regional Policy Documents

At the SADC level there are a number of policy tools used to govern energy sector planning and intervention. Below are some of the key policies and policy instruments that have been formulated³:

- SADC Protocol on Energy (1996)
- SADC Energy Cooperation Policy and Strategy (1996)
- SADC Energy Action Plan (1997)
- SADC Energy Activity Plan (approved in 2000); and the
- SADC Regional and Indicative Strategic Development Plan (2003)

The above mentioned policy instruments are however, more than a decade old. Below is a list of the most recent regional energy related policies⁴. However, it should be noted that certain policy documents mentioned below, are still under development:

- Regional Energy Access Strategy and Action Plan (2010)
- SADC Biofuel Decision Making Tool (2010)
- Framework for Sustainable Biofuels (2010)
- RE Strategy and Action Plan, (in draft, 2011)
- Regional Indicative Strategic Development Master Plan: Energy Sector Plan (2012)

In August 2012, SADC approved the Regional Infrastructure Master Plan. The plan, to be implemented over a 15-year period beginning from 2013, will serve as a key strategy to guide the creation of efficient, cost-effective trans-boundary infrastructure connecting all SADC Member States in areas of energy, water, ICT and transport. The recent development of the policy tools mentioned above demonstrate that there is a shift towards RE development in the regional energy agenda. However, a significant portion of these policy tools are yet to be fully implemented due to a number of constraints outlined in subsequent sections of this report.

2.1.2 National Policies and Plans in SADC Member States

The SADC region, incorporating 15 individual countries, demonstrates uneven progress with regards to RE deployment. The various SADC Member States are thus at different levels of RE development and implementation, requiring different resources and capacity in the transition to a low carbon development path.

¹SADC. 2010: Expanding Energy Generation Capacity in SADC: Challenges and Opportunities for Power Sector Infrastructure Development. *Energy Policy Brief* No.1.

²Mwewa, L. 2010: *Status of Renewable Energy Policy Framework Development in the SADC Region*. Available Online: www.polytechnic.edu.na.

³SADC. 2010: Expanding Energy Generation Capacity in SADC: Challenges and Opportunities for Power Sector Infrastructure Development. *Energy Policy Brief* No.1.

⁴CAAST-Net Bulletin. 2011: SADC-Europe Solar Energy Symposium in Malawi. *Research Publication*. Available Online: CAAST-Net.org.

For the majority of SADC countries, even though energy policies exist, these policies are often limited to specific programmes focusing primarily on conventional energy generation. In certain instances, the policies formulated are inadequately supported by detailed implementation plans to realise set national policy objectives⁵. Table 2.1 below provides a summary of key national energy policies per SADC member state.

Table 2.1: Energy Policies in the SADC Countries⁶

Country	Key Policies and Programmes
Angola	National Energy Security Program, National Energy Policy, Power Sector Executive Program (ESSP), National Rural Electrification Programme.
Botswana	Botswana Energy Policy, Botswana Energy Master Plan, Renewable Energy Feed-in Tariff (under development).
Democratic Republic of the Congo	DRC Energy Policy.
Lesotho	The Draft Energy Policy for the Kingdom of Lesotho, Energy Action Plan, Lesotho Renewable Energy-Based Rural Electrification Project (LREBRE), National Electrification Master Plan.
Madagascar	Madagascar Action Plan (2007-2012), Promotion of Rural Electrification through Renewable Energies (2008-2014, with support from GIZ).
Malawi	National Energy Master Plan, Energy Sector Policy, Malawi Growth and Development Strategy, Programme for Biomass Energy Conservation (ProBEC – ended in 2010). Regulatory policy in the form of a biofuels obligation/mandate.
Mauritius	Long Term Energy Strategy, Outline of the Energy Policy Action Plan (2011-2025), Mauritian National Energy Policy.
Mozambique	Electricity Master Plan and Energy Policy, Energy Sector Strategy. Regulator policy in the form of biofuels obligation/mandate. Biomass Energy Strategy (under development).
Namibia	White Paper on Energy Policy (1998), Strategy for Energy Efficiency and Energy Regulatory Framework is currently under development.
Seychelles	Second National Energy Policy
South Africa	White Paper on Energy Policy 1998, Renewable Energy White Paper 2003, National Integrated Energy Plan (IEP), Integrated Resource Plan (IRP) for Electricity 2010 to 2030, National Electrification Programme and RE Independent Power Producer Procurement Programme.
Swaziland	National Rural Electrification Programme, National Energy Policy 2002, National Energy Policy Implementation Strategy 2009.
Tanzania	Regulatory policies in the form of a small-power programme feed-in tariff (incl. premium payment) and National Electrification Programme.
Zambia	Rural Electricity Master Plan, Energy Strategy 2009-2030 (work in progress), National Energy Policy 2002.
Zimbabwe	Energy Policy Framework 1998, Renewable Energy Policy to be introduced, National Rural Electrification Programme.

The SADC region is characterised by a wealth of renewable energy resources that, if and when harnessed, are capable of meeting the region's energy needs⁷. Overall, while the Southern

⁵Chanakira, M. 2011: SADC Regional Economic Integration in the Energy Industry. pg. 67.

⁶REN21.2012: Renewables 2012 Global Status Report.pg.65.

⁷SADC. 2009: SADC Infrastructure Development Status. Report for Council and Summit. Sectorial Program Review

African region is keen to maximise the benefits derived from the use of renewables, current commercial and industrial operations in most Member States continue to operate in a 'business-as usual' manner. This is a result of a combination of factors related to capacity constraints, lack of RE awareness and difficulties in accessing financing towards RE implementation.

2.2 Renewable Energy Sector Development: Opportunities, Barriers and Constraints

2.2.1 Opportunities for RE Exploitation

Concerted efforts have been employed across the SADC region to exploit the opportunities associated with using renewable energy resources. This includes a significant number of SADC Member States setting targets for renewable energy generation. For example, countries such as Madagascar currently have a 57% share of electricity produced from renewable sources, with the intention of increasing this share to 74% by 2020⁸. With the introduction of the RE Independent Power Producer Procurement Programme, South Africa is also progressing towards the adoption of renewable-based power generation. South Africa's renewables target for 2020 currently stands at 13%, thereby reducing the country's reliance on coal and diversifying the energy mix⁹, and SA has committed to reducing GHG emissions by 34% by 2020, and by 42% by 2025. According to the IRP 2010 - 2030, RE will contribute 18.2 GW by 2030 (about 42%). On the other hand, countries like Lesotho have established renewables targets focused on rural energy access, targeting 35% of rural electrification from renewables by 2020. This to a certain degree demonstrates that there is an interest from SADC Member States to support renewable energy development going forward.

RE potential in the SADC region is varied, given differences in natural resource availability within individual Member States. Mozambique, Malawi and Tanzania are reported to be countries that have the highest potential for geothermal energy¹⁰. On the other hand, the potential for hydro power generation is higher in countries such as the DRC, Angola and Mozambique; and relatively lowest in countries such as Botswana, Swaziland, Seychelles and Mauritius, respectively. Given differences in resource potential per SADC member state, a wide range of non-conventional RE opportunities are identifiable in relation to the following renewable energy sources:

- Wave Energy
- Solar Energy
- Wind
- Tidal Range
- Tidal Currents
- Ocean Currents
- Ocean Thermal Energy
- Salinity Gradients
- Biomass

Annex 4 provides an overview of the current state and potential for renewable energy development in the various SADC member countries.

⁸REN21.2012:Renewables 2012 Global Status Report. pg.108

⁹Ibid

¹⁰ThinkGeoenergy. 2012: *Malawi, Mozambique and Tanzania with geothermal potential*. Available Online: <http://thinkgeoenergy.com/archives/4326>. Accessed 02 August 2012.

2.2.2 Barriers and Constraints to RE Development

Amidst the opportunities that surround the SADC energy sector, there have also been barriers that hinder the move towards clean energy development. The barriers to the development of RE in the region are generally well understood and documented. Broadly, the following have been identified as key barriers to RE penetration and use in the SADC region¹¹:

- Lack of sound policy and regulatory frameworks to promote RE
- Limited institutional mechanisms and capacity to implement RE programmes and projects
- Lack of RE awareness & social acceptability
- Inadequate funding mechanisms and limited use of RE support mechanisms
- Limited technical capacity and local RE expertise
- Inadequate infrastructure to support RE development
- Subsidies to conventional energy development, but not to RE technologies
- Lack of regional co-ordination and linkages in RE development in the energy sector; and
- Low levels of energy access. This includes issues pertaining to the availability, affordability and acceptability of RE technologies, leading to a lack of sustainable funding mechanisms for rural electrification programmes, which are required to service significant populations without access to modern energy services

In summary, there are numerous challenges to RE development in the SADC region. Despite an abundance of clean energy sources available for exploitation, higher costs of generation, combined with inadequate policy and regulatory frameworks to leverage private sector investment, continue to hinder the accelerated deployment of renewable energy systems. The way forward for SADC's energy sector is multi-faceted, owing to the technical, financial, institutional and political challenges that hinder RE development. Future interventions geared at developing the RE sector will need take into account the local geographic, socio-economic and political environments, along with the need to ensure long-term sustainability.

2.3 Regional Co-ordination in the SADC Energy Sector

The main instrument used to drive regional co-operation and integration at the SADC level is the co-operation between SADC and the International Cooperating Partners (ICPs). To this end, SADC and its ICPs adopted the Windhoek Declaration in 2006, aptly termed a 'Framework for a New Partnership between SADC and its ICPs'. This Declaration encompasses the establishment of Thematic Groups as a platform to give attention to specific priorities in SADC on a sectoral basis. As such, the SADC Energy Thematic Group provides SADC and ICPs an opportunity to pool resources towards the implementation of specific energy programmes in areas of common interest.

Since April 2006, SADC and the ICPs have undertaken a number of parallel activities towards implementing the Windhoek Declaration. Annex 5 provides an overview of the programmes and activities currently supported by ICPs within the SADC energy sector. Despite significant financial and institutional support provided by ICPs to the SADC region, it has been cited that limited institutional capacity at the SADC Secretariat remains a critical limiting factor to achieving greater effectiveness in the implementation of core interventions. This includes constraints related to the SADC Secretariat driving and taking ownership of relevant initiatives designed to address the energy sector barriers outlined in section 2.2.2 above.

¹¹Mwewa, L. 2010: *Status of Renewable Energy Policy Framework Development in the SADC Region*. Available Online: www.polytechnic.edu.na.

SADC and its ICPs still recognise the SADC Energy Thematic Group as an important tool, not only to bring about a degree of harmonisation and alignment amongst relevant stakeholders, but also in improving development results in the implementation of the common SADC energy agenda. However, in order to adequately service key areas of energy sector co-operation between SADC and ICPs (and to accommodate current institutional capacity constraints at the SADC level) there is a need to structure an effective dialogue, reaffirming commitments under a revised partnership. What is proposed is a revised partnership, whereby the respective role of SADC, Member States and the ICPs is clearly mapped out.. While it was assumed that SADC would champion such a process, progress to date has been minimal and a new process should be implemented to ensure that this revised partnership is formed with clear commitment and political will.

Such a partnership will explore other means and vehicles for implementation, taking into account SADC strengths and weaknesses, where interventions are customised to SADC's specific situation. This would allow for co-operation approaches to be flexible and more likely to ensure that SADC-ICP targets and objectives are achieved within agreed timeframes. Moreover, the SADC Energy Thematic Group, as a platform for energy sector co-ordination, provides ICPs with opportunities to partner on programmes perceived to be of mutual benefit, so as to avoid the duplication of energy interventions undertaken in the region.

3 Stakeholder Consultations: Summary of Feedback

Barriers to the development of RE within the SADC region are varied and range from technical to those non-technical in nature. A significant number of the stakeholders consulted highlighted barriers within the legal and institutional frameworks of SADC and Member States, the financial considerations of RE development, as well as capacity and information barriers, including technological knowledge and levels of awareness. All of these currently serve to limit the development of RE in the SADC region and are explored in greater detail below.

3.1 Institutional Capacity and Political Challenges

Based on the stakeholder inputs received, capacity constraints are exhibited within relevant institutions in the SADC region concerning knowledge of RE resources, technologies and policy options. This suggests that there is a need to increase the number of personnel and/or develop the required capacity at the SADC Secretariat and Member State level, to overcome these blockages. With the exception of a few countries, there is a lack of sufficient information, research and data around RE resources and applicable technologies, which is necessary to inform long-term energy planning in Member States and the region as a whole.

The capacity constraints noted above are further compounded by a perceived prevalence, at the country level, to promote national interests over regional needs. This context, coupled with a SADC institutional framework that is believed to not have the requisite power to enforce regional decision-making, implies that regional decisions may not necessarily be translated into action within Member States. The feedback received suggests that a combination of a lack of political will and government support, as well as the prevalence of national interests, can significantly limit opportunities for regional co-operation aimed at the development of the SADC RE sector. Another factor highlighted as a possible hindrance to effective regional co-operation in the energy sector is the potential impacts of sanctions on certain SADC countries imposed by some ICPs. Sanctions imposed on Member States by ICPs can delay projects or result in projects not being supported.

It is evident that different groups of stakeholders have varied experiences in dealing with the challenges presented by the 'softer issues' associated with RE development within SADC. However, there is widespread agreement that addressing these softer issues should be prioritised. Negotiating and mediating different political needs and diverging agendas is often noted to be more challenging than the more tangible 'hard issues', such as financing difficulties and technical capacity. The general consensus is that political will is a key factor in the successful implementation of regional energy programmes. In such a context, stakeholders are motivated to direct internal resources towards mutually agreed regional plans, provided that sufficient buy-in has been established and these plans meet the differentiated needs of the stakeholders concerned. The potential benefits of regional integration as highlighted by stakeholders are explored in greater detail in section 3.3 below.

3.2 Financing and Technical Expertise

On the financing side, there is still the perception that there are high costs associated with developing RE technologies. This is mainly due to the relatively low costs of fossil fuels within Member States, including areas of fossil fuel subsidy, coupled with low levels of local manufacturing of RE technologies in the region. The import of clean technologies is thought to render these less cost competitive in comparison to conventional technologies that are currently well-established in local energy markets.

In light of the above, stakeholders noted specific challenges around making RE viable for investment within the region. There are difficulties with accessing financing for SADC members to develop appropriate policies, undertake research and implement demonstration projects, in order to encourage investment in RE. In particular, challenges exist in effectively accessing finance made available by international donors and investors to support both governments and the local private sector in the promotion of increased RE market activity. The limited expertise amongst regional actors to develop bankable projects has also contributed to the reluctance on the part of investors to finance smaller scale projects based on a lack of supporting feasibility studies, data and viable business models to justify investment. For financiers, the costs to perform the required due diligence can often outweigh the returns on investment for small-scale projects.

As a result, there is a noticeable bias in the SADC region to develop larger energy projects to feed into regional networks. This approach, in turn, de-emphasises off-grid solutions and non-industrial applications of renewable energy. The latter, smaller projects however, respond to the region's other pressing social priorities, including the need to address widespread energy poverty and insufficient access to modern energy services for a large portion of the Southern African population. The related co-benefits of small-scale RE projects also include support for poverty alleviation, job creation, gender empowerment and other socio-economic objectives. Thus, concerns exist that should large regional energy projects come online, they have the potential to dominate the energy market, creating redundancies for small-scale RE projects, thereby limiting the development and use of alternative energy in most SADC countries.

3.3 Need for Regional Co-ordination and Co-operation

Over the years, numerous regional actors have developed varying types of expertise on specific matters pertaining to RE. This has been invaluable in achieving the incremental progress evident in RE development in the SADC region. In this context, regional co-ordination in the roll-out of RE programmes and interventions is an important mechanism, to draw on expertise that currently exists and to maximise on the contributions of individual institutions and actors.

Regional integration in RE project and programme development amongst donors, private sector and regional and national policymakers could potentially be improved through the establishment of a regional RE and EE centre. This one-stop shop could be developed on the basis of a shared and common understanding amongst the relevant stakeholders, to co-ordinate and build capacity and awareness around RE matters in the region, given that regional priorities are often not aligned to Member States policies or plans.

The key drivers of regional co-ordination are summarised below:

- Enabling knowledge and experience sharing between Member States, and providing a platform for members to peer review each other's RE efforts and provide assistance where feasible.
- Promoting integration in the region and within Member States, considering that the majority of institutions work independently of one another.
- Promoting awareness around RE technologies and RE resources amongst member countries.
- Developing standards for RE technologies within the SADC region, with the aim of building regional local manufacturing capacity and relevant supply chain establishment.
- Providing information on sources of funding and the mechanisms for accessing climate and energy funds to drive the implementation of both regional and national RE programmes.
- The private sector needs to be encouraged to get involved in the development and delivery of renewable energy sources, and for this to take place, governments need to lure investors with appropriate policy mechanisms (incentives, subsidies, feed-in tariffs, tax rebates; and generally promotion of renewable resources at investor forums and trade shows.
- Performing regular (e.g. annual) energy data collection, monitoring and needs assessment per SADC member state, to inform plans to build on existing (but limited) RE capacity.
- Reduction of import and export tariffs of RE technologies and fuels in the region.

Although there are still significant challenges to RE sector development, related mainly to the implementation and development of RE projects and policies, efforts to promote RE development are also constrained by underlying institutional and political factors that need to be addressed going forward.

4 Review of the SADC Renewable Energy Support Programme

The MFA's Renewable Energy Support Programme (RESP) to the SADC Secretariat and Member States aims to provide technical support in aid of RE deployment within Southern Africa. The programme has the goal of building RE capacity, through the development of knowledge around applicable renewable energy resources and technologies, for both Member States and the SADC region. In undertaking this support, the MFA seconded a technical expert

to be placed within the SADC Secretariat, to assist and manage the RESP process, provide support in the development of the sector within SADC, and assist in the development and formulation of a Renewable Energy Strategy and Action Plan (RESAP) for the region.

4.1 Evaluation of the Programme Document Logframe

The programme document logframe begins by stating an overall objective as “Increased Capacity in the field of Renewable Energy and Energy Efficiency in Southern Africa”. However, this is the overall objective of the RESAP and not of the RE support programme. Based on the programme document, it is suggested that this overall objective be changed to reflect the aims of the support programme.

A standard logical framework, or ‘logframe’, should clearly state what the inputs into the programme are, what the activities are, what the outputs are, and the intended results and impacts. In contrast, the current logframe is structured according to activities, indicators, sources of verification and assumptions. It is recommended that the logframe be modified into a results chain so that the different aspects of the programme are reflected according to the following, in a vertical or horizontal format as demonstrated in Figure 4.1.

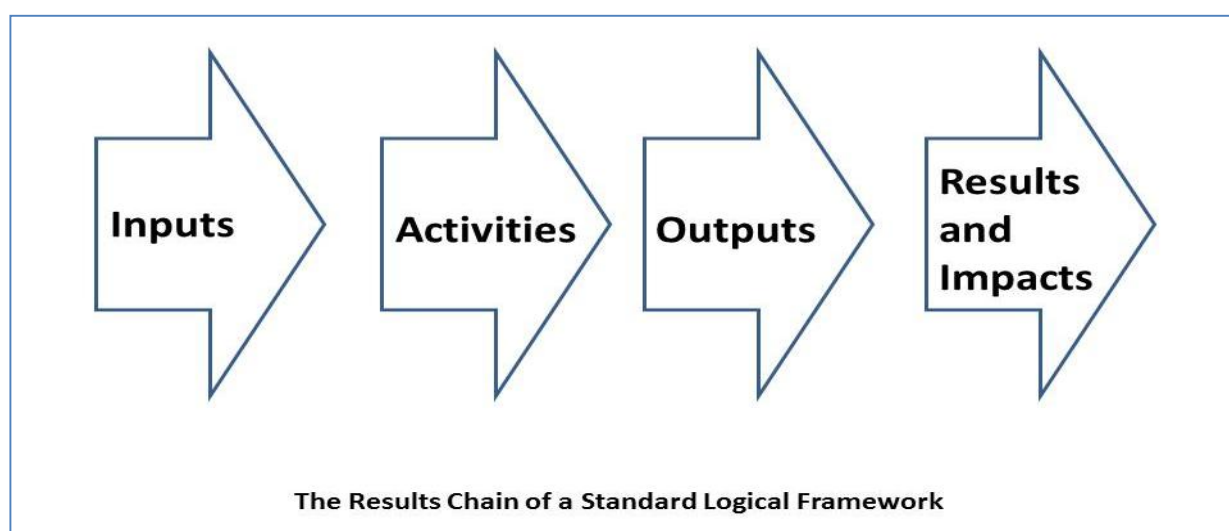


Figure 4.1: A Standard Logical Framework

This new format should be employed for each of the three components: Development and implementation of the SADC RE&EE strategy; Technical and Admin Support to the SADC Secretariat’s Energy Unit; Enhancing Institutional Capacity in the field of RE & EE in Southern Africa.

It is currently unclear who the logframe is intended to affect, as it does not answer the question: ‘who does what to whom, in order to achieve what?’ As such, there should be a clearer explanation of the actors the programme is intended to influence, so as to enhance institutional capacity in the field of RE & EE in Southern Africa. It is further suggested that there should be a breakdown of the different actors involved, including outlining the role played by the Southern African Power Pool (SAPP), Regional Electricity Regulators Association of Southern Africa (RERA), utilities, Community Based Organisations (CBOs), NGOs and Member States.

In addition, at present the programme indicators are not designed in such a way as to be measurable. Some of the indicators are actually sources of verification, for example, under component 1, the second indicator is described as “outcomes of the workshops/meetings and

the above mentioned ministerial meeting”. This is not a metric but a source of verification. There is also no reference made to a timeline, and so it is difficult to assess if the programme is meeting its targets or milestones on time.

A summary of the RESP logical framework is provided in table 4.1, along with the key assumptions associated with its implementation.

Table 4.1: A summary of the RESP Logical Framework including suggestions on how to improve it.

Overall Objective	Indicators	Sources of Verification	Assumptions	Additional elaborations needed
Increased capacity in the field of Renewable Energy and Energy Efficiency in Southern Africa	<ul style="list-style-type: none"> Proportion of the total energy production & consumption in the region from RE. New RE&EE innovations and solutions 	<ul style="list-style-type: none"> Monitoring and Evaluation Reports of the Programme. SADC Annual Reports. Regional and national statistics. 	<ul style="list-style-type: none"> Member States will approve of and commit to the RESAP. There will be Member State buy-in through use of consultative and participatory approaches to designing and implementing the RESAP. Stakeholder comments are included in revisions of the RESAP. 	Objective: Increase in access to affordable renewable energy in the SADC region.
Component 1: Development and implementation of the SADC RE&EE Strategy. Activities: <ul style="list-style-type: none"> Drafting the RE&EE Strategy and Action plan for the SADC region Stakeholder engagement; workshops and meetings 	<ul style="list-style-type: none"> Presentation and approval of the draft Strategy and Action Plan at the 2011 Energy Ministers' Meeting. Outcomes of the workshops/meetings and the Energy Minister's Meeting. 	<ul style="list-style-type: none"> The strategy document. Minutes of the Ministerial Meetings. Workshop reports. 	<ul style="list-style-type: none"> SADC supports the programme as defined in this programme document. Member States favour RE over large-scale fossil fuel utility-led power. The required human resources are in place to implement the plan. 	Indicator: Member States are aware of benefits of RE and EE to different energy users/sectors, and to energy security. Indicator: Alignment of RESAP with member state policies and focal areas – Member States submit

Overall Objective	Indicators	Sources of Verification	Assumptions	Additional elaborations needed
				<p>their RE&EE plans, strategies and projects.</p> <p>Indicator: Alignment of RESAP with focal areas of ICPs.</p>
<p>Component 2:</p> <p>Technical and admin support to the SADC Secretariat's Energy Unit.</p> <p>Activities:</p> <ul style="list-style-type: none"> Supporting the work of the Energy Unit. Training of the RE expert of SADC. 	<ul style="list-style-type: none"> Annual report of the Energy Unit (this is a means of verification). Energy unit does not face capacity cuts and capacity and personnel is increased. Existing staff stays within the Energy Unit. 	<ul style="list-style-type: none"> Progress Reports of the Programme. Technical reports available in hardcopy and on the web for each workshop. 2012 and 2013 semi-annual and annual reports. Verified benefits of the implementation of the RE strategy by December 2013 for reporting at the Energy Minister's Conference in May 2014. Reports and minutes of consultations. 	<p>SADC Secretariat's Energy Unit is sufficiently resourced and mandated. No competing organisation exists.</p>	<p>Indicator: Development of ToR for and establishment of a RE technical sub-committee.</p> <p>Indicator: Number of member state stakeholder partnerships formed.</p> <p>Indicator: Number of technical advisory services provided, according to the number of reports and presentations requested.</p> <p>Indicator: Number of SADC energy documents stored in a core on-line library for on-going benefit of the institution.</p> <p>Indicator: Completion of the 2012</p>

Overall Objective	Indicators	Sources of Verification	Assumptions	Additional elaborations needed
				<p>report on implementation.</p> <p>Indicator: Quality of technical support measured by external evaluation and peer review.</p> <p>Activity: Development of a succession plan for Technical Assistance.</p>
<p>Component 3:</p> <p>Enhancing institutional capacity in the field of RE&EE in Southern Africa.</p> <p>Activities:</p> <ul style="list-style-type: none"> Establishing the RE technical committee of SADC Organising workshops on different themes Commissioning technical studies concerning RE&EE 	<ul style="list-style-type: none"> Number of participants/organisations participating in the technical committee meetings. Quality of technical studies. Quality of workshops. Institutional capacity reflects needs of the region. 	<ul style="list-style-type: none"> Recordings/minutes of the technical committee. List of participants. Feedback from the workshops/members of the technical committee. 2012 and 2013 semi-annual and annual reports. Verified benefits of the implementation of the RE strategy by December 2013 for reporting at the energy minister's Conference in May 2014. Reports and minutes of 	<ul style="list-style-type: none"> SADC supports the programme as defined in this programme document. Member States support the programme. 	<p>Indicator: Quality of workshops - recruitment of qualified trainers through development of appropriate ToR</p> <p>Indicator: Programme officer for energy appointed by the energy ministers meeting in May 2012.</p>

Overall Objective	Indicators	Sources of Verification	Assumptions	Additional elaborations needed
		consultations.		
Component 4: Exit Succession Strategy.	<ul style="list-style-type: none"> Programme officer for RE appointed by time of energy ministers' meeting in May 2013. Development of ToR for such an expert in collaboration with the SADC energy desk. 	<ul style="list-style-type: none"> ToRs developed. Recruitment process outlined. Successful appointment and contracting of expert. 	<ul style="list-style-type: none"> The energy expert appointed by the MFA has sufficient time to handover institutional knowledge. Funding is allocated for the appointment of such an expert. 	Indicator TORs of new recruit specify requirement for knowledge of the region and political negotiation and advocacy skills.

4.2 Programme Management and Implementation

The introduction of the RESP has achieved a number of outcomes and engaged stakeholders in the SADC region on the subject of RE development. However, a number of gaps, challenges and barriers to RE sector development have been identified by stakeholders in the process, which are discussed below.

4.2.1 Support to RE Sector Development in Southern Africa

There are a number of gaps that have been identified in the current programme that have the potential to hamper the further development of RE in the SADC region. The gaps identified are wide ranging and involve issues such as increasing synergies between institutions within SADC, and the lack of the involvement of key institutions in supporting the strategic direction of the RESP.

Based on the stakeholder consultations, the traditional manner of SADC communication and information sharing has been found to be inadequate. However, the effective sharing of information around RE knowledge, experiences and expertise in the region is greatly needed. There is however, a lack of the required structures to enable this and currently not enough capacity within SADC to facilitate this process. Limited communication with the ICPs and Member States around the RESP, including those who are involved in the programme, has been highlighted as an issue. As a result of ad-hoc communication with key stakeholders, the RESP has maintained a relatively low profile amongst ICPs and Member States, with a number of respondents not being familiar with the programme, or confusing it with the RESAP itself.

The lack of involvement of relevant and key institutions, such as SAPP and RERA (as SADC level institutions representing the perspectives of the utilities and electricity regulators, respectively), is noted to be a major shortcoming that has not been fully accounted for in the support programme. Utilities are often fundamental to the implementation of many RE programmes and projects within Member States, or the region as whole. As the regional implementing agents, the capacity to raise funds to support the implementation of energy

projects is well established within utilities. Thus, support also needs to be provided to utilities to ensure that implementation can occur. Similarly, RERA would provide valuable input in support of the successful implementation of the RESP, particularly on issues of economic efficiency in regional electricity markets and the potential for the regional trade of renewable energy in the future. Therefore, both SAPP and RERA perspectives need to be taken into account to inform future programming needs of the RESP.

Overall, there is limited evidence to suggest that the RESP has provided adequate support to other key regional actors in the region and to the RE sector as a whole. However, there is an intention on the part of the project implementers to introduce new SADC-wide activities and initiatives as part of the RESP that have the potential to address this issue. However, for the programme to further the development of the SADC RE sector, lack of effective stakeholder engagement in the implementation of RESP, needs to be addressed going forward.

4.2.2 Programme Technical Support

The technical support programme is designed to second technical support from VTT within the energy division of the SADC Secretariat, in order to build capacity in the fields of RE and EE in Southern Africa. It is understood that the technical support provided by VTT is responsible for the following activities in support of RESP:

- To coordinate the development of the Regional Renewable Energy Strategy and Action Plan (RESAP),
- Co-ordinate the implementation of the SADC RE support programme and the RESAP,
- Report annually on the progress of the work undertaken on behalf of RESP and,
- Support the SADC energy division in responding to the challenges presented by RE and EE in the region.

While the Technical Advisor together with VTT home office support is responsible for the programme implementation of RESP, the advisor acts on behalf of the SADC Secretariat. Therefore, the Technical Advisor does not act on his own accord and thus, operates within SADC established systems and under the guidance of the Director of Infrastructure & Services and the Senior Energy Programme Officer. The stakeholders consulted affirmed that the technical support provided has contributed to general awareness around RE issues within the SADC Secretariat. However, stakeholders expressed concerns that once this support ends the RESP will cease to exist. Therefore, there is a need to develop a succession plan to support the implementation of the RESP in the long-term.

Following 18 months in the implementation of the RE support programme, it is vital to understand the scope of impact the programme has had on Member States, and if the support has achieved its intended goals. While there are major challenges to implementation of RE within the SADC region, there is a growing awareness amongst SADC Member States about the potential of RE resources and applicable technologies. However, there is a major gap in understanding the steps to be followed to ensure the implementation and adoption of RE technologies within Member States. In particular, challenges revolve around the capacity to liaise with funders, prepare appropriate documents and the technical knowledge needed to take projects to financial close. In order to enable the effective implementation of programmes, clear guidance needs to be given to Member States to bridge this gap.

There is a further challenge around developing the necessary technical expertise relating to RE within Member States. While the current technical support provided in the RESP has been based within SADC, there is a challenge in filtering this support to the Member State level. Member States do see a need for there to be a renewable energy programme at the SADC level. However, it is felt that the programme itself could add more value to the region if it actively engaged individual Member States on a regular and on-going basis. Presently, the desired support at the country level, wherein Member States feel that they have benefitted from the introduction of RESP in the region, has yet to be attained. There is a perception amongst Member States that the technical support offered is only accessible or available at the regional level. This is due to the limited involvement by the technical support personnel, coupled with an overall low profile of RESP at the member state level. While the current technical support provided within the RESP is much appreciated, it was consistently highlighted that there is a need to incorporate further experts in the support process. In particular, there is a need for experts from the region that understand the context, both regionally and within Member States, in which the RESP is implemented.

Stakeholders also highlighted that an internationally consultant-driven technical support programme does not fully comprehend the historical, political and economic context in which RE is to be implemented within Southern Africa. Therefore, a combination of the use of international experts and local consultants/regional experts will likely provide a more robust technical support to SADC and its member states. Furthermore, skills transfer is seen as necessary to ensure that local expertise exists or is cultivated to manage similar programmes in future.

4.3 Progress against the Overall Objective of RESP

The overall objective of the programme is stated as: "Increased capacity in the field of Renewable Energy and Energy Efficiency in Southern Africa". At this stage of the programme cycle, there has been no implementation of the RESAP and hence it is too early to assess progress against the two indicators specified for this overall objective, namely, "Proportion of the total energy production & consumption in the region from RE" and "New RE&EE innovations and solutions".

At this mid-term stage of the project, member States have not yet approved of and are not particularly committed to the RESP. Additionally, there have been no new RE and EE innovations introduced as a result. For example, a monitoring and evaluation systems has not yet been established, nor have any monitoring and evaluation reports of the RESP been generated. Likewise, with the exception of South Africa, there are no new national statistics. Hence any assessment of progress is not based on the sources of verification specified in the logframe, but is based on responses to the interviews and gleaned from Energy Minister's meetings minutes.

The bulk of the activities thus far have concentrated on development of the RESAP, which is a suitable foundational document for further consultation and elaboration, preferably on a country-by-country basis. However, this would take considerable marketing and communication drives, since currently the RESP is little known among either ICPs or Member States, and hence there has been little participation or buy-in into the programme. Consequently, Member States have persevered with their concentration on energy provision through large power utilities and other solutions negotiated through the SAPP. With regards to providing support to Member States, the importance of SADC's commitment for the implementation of the RESAP is emphasised. However, the limited resources and capacity of SADC should be also included in the strategy work and factored into the design of a regional technical support programme.

4.4 Progress of RESP in Relation to Specific Objectives

The table below summarizes progress in relation to specific objectives as indicated in the RESP logframe.

Table 4.2: A summary of RESP programme progress in relation to specific objectives

Objective	Activities	Comments on Progress
Component 1: Development and implementation of the SADC RE&EE Strategy.	<ul style="list-style-type: none"> Drafting the RE&EE Strategy and Action plan for the SADC region Stakeholder engagement; workshops and meetings 	<p>There has been erratic communication about the RESP with both the ICPs and Member States, including those who are involved in the programme. As a result, the RESP is not well known and there has been little consultation, buy-in or active promotion thereof.</p> <p>In December 2011 in Gaborone, according to the minutes of the second Strategy and Action Plan Consultative Workshop, stakeholders' buy in reports by Member States were due by end of 3rd week of March 2012, and these would then be given to ministers for approval. Not all the reports have been received and the outstanding reports need to be collected. The reports would then be shared with power utilities. The consultant was also asked to highlight SADC manpower deficiency and recommend a way forward.</p> <p>During the third steering committee meeting of the SADC Renewable Energy Support Programme, it was noted that after the final RESAP has been submitted to the Member States and other stakeholders, SADC will organise meetings with Member States representatives concerning the national road maps. Road maps will be discussed, commented and, if necessary, modified to be in line with the RESAP. There will be three meetings: first one with 5 Member States, second and third one with 5 and 4 Member States.</p> <p>At this same meeting there were doubts raised about the use of the "four pillars" approach to the strategy. It was noted that it is difficult to change this conceptualisation since the entire strategy is structured according to the pillars, and changing this categorisation would require most parts of the strategy to be rewritten. In addition, the Member States' representatives approved this division in the second consultative workshop, and changing it in this phase might cause confusion. It was then agreed that MFA will deliver comments on this issue, and that SADC together with the consultant will incorporate the comments into the strategy documents.</p> <p>A consultation of ICPs was held in May 2012.</p> <p>Another concern was raised about the lack of a Strategic Environmental Assessment (SEA) which should have been done in parallel to the development of the RESAP, but it has not yet been done. The TA was to get advice from others in VTT on how to proceed with incorporating the SEA and once done, that the Steering Committee would decide how to proceed.</p> <p>A follow-up meeting to the Third Steering Committee Meeting</p>

		<p>was scheduled for June 2012 to address concerns raised, but there are no minutes available (at the time of the writing of this report), so the status of the development of the strategy would appear to be still in progress.</p>
<p>Component 2: Technical and admin support to the SADC Secretariat's Energy Unit.</p>	<ul style="list-style-type: none"> Supporting the work of the Energy Unit Training of the RE experts of SADC 	<p>Since there are no records assessing the contribution of the TA, it is difficult to assess progress in this regard. Overall, the presence of the technical advisor (TA) as lead representative from VTT has been beneficial, particularly with regard to raising awareness of financial opportunities in pursuing RE. Moreover, the Secretariat has become more aware of the potential of RE resources and technologies. It would appear; however, that energy efficiency has not been profiled to the same degree given the lack of mention thereof in the reports and minutes.</p> <p>The TA has primarily operated at the SADC level, and the capacity building and knowledge afforded by his presence has not yet filtered down to Member States. At Member State level, there has not been any skills transfer and little TA support. Dissemination of technical expertise has also been impeded by the lack of clarity around the roles and responsibilities of the TA, to the extent that assistance has extended to including general duties related to energy capacity building within SADC. As a result, refinement and progress on the overall goal has been hindered.</p> <p>The technical expertise of the TA appears to be weighted towards knowledge about the technical aspects of RE technology. While useful, this position might have been more appropriate to involve someone with experience in the policy and regulatory planning environment, and preferably someone with an insight into the national political contexts, knowledge about the status of technological development and maturity of the markets under review. Such a skills set should at least be complemented by the input of experts from the region that understand the context, both regionally and within member states, in which the RESAP is to be implemented. The technical support provided by VTT has not been able to adequately address this key issue.</p> <p>The technical assistance is funded by the Finnish government, with the understanding that the VTT team would look after Finnish interests and objectives, however, the VTT consultant has demonstrated a weak knowledge of Finnish policy and does not have a clear understanding of what his role is. Hence, he has been subsumed with other SADC energy work and has even assisted with revisions of the RESAP - a task for which an external consultant was appointed.</p>
<p>Component 3: Enhancing institutional capacity in the field of</p>	<ul style="list-style-type: none"> Establishing the RE technical committee of SADC 	<p>There has been no progress on the above activities at this point.</p>

RE&EE in Southern Africa.	<ul style="list-style-type: none"> • Organising workshops on different themes • Commissioning technical studies concerning RE&EE 	
Component 4: Exit Succession Strategy.		<p>There has been no progress on a succession plan or recruitment of an energy expert to continue the work and thus there is the risk of losing a sustainable long-term strategy for the support programme.</p> <p>During the third steering committee meeting of the SADC Renewable Energy Support Programme, in February 2012, the MFA was requested to send a letter to the Executive Secretary of SADC to address the issue of creating a post for Renewable Energy Expert. This post would be needed to confirm the continuation of the RESAP implementation after VTT's participation and the RE support project have ended. Moreover, the MFA was anticipating more expertise from the combined skills of the VTT staff back in Finland who would play a support role for the consultant via its Head Office however, this has seemingly not been forthcoming.</p>

4.5 RESP Progress in Relation to Indicators as Outlined in the Terms of Reference.

The table below provides an overall summary and analysis of each indicator and of RESP reaching its objectives in this regard.

Criteria	Comments
Relevance	<p>The objective of implementing a RESP is highly relevant for SADC countries given the abundant renewable energy recourse, energy deficits in the region, and urgency for investments that bring developmental benefits, especially those with high job creation potential such as exists with renewable energy.</p> <p>The role of the SADC secretariat is relevant insofar as it has some influence in the region. It has the capacity to motivate for adoption of the RESAP at the energy minister's meetings. However, its influence only extends to the level of endorsement and remains minimal as a result. A regional programme is limited since national self-sufficiency is a priority for member states over coordination of regional investment plans. This needs to be addressed at a political level, and it is here that the SADC secretariat can play a role.</p>

Efficiency	<p>There is no-one championing and driving the RESP. The human resource and skills capacity of the SADC secretariat is minimal, since only three people are employed at the energy desk - one permanent staff member and two positions paid for by donors. This staff complement is too small and they are stretched thinly in addressing energy requirements of member states and fail to be effective champions of the renewable energy potentials and necessary policy mechanism and political will required to drive its expansion in the region.</p> <p>SADC Member States do not have effective legislative and regulatory frameworks for providing an enabling environment for RE market development, and at this level, technical expertise is needed not only in the technological aspects of renewable energy generation, but also in the policy environment. The skills of VTT are also not strong on the political dynamics of the national context and they have not used short term experts to cover this gap even it is enabled in the project document.</p> <p>The RESP could have been strengthened by the use of clearer timeframes for each output, along with specification of whom or which institution is responsible for tasks. This would be useful to inform ICP and the SADC Energy Thematic Group.</p>
Effectiveness	<p>There has been little stakeholder buy-in or participation into the programme. Stakeholders' buy in reports by Member States were due by end of 3rd week of March 2012, and it appears they have not arrived yet.</p> <p>Currently the RESP has low visibility among either ICPs or member states. Consequently, member states have not pursued a renewable energy development path and its remains to be seen if the suggested road maps are developed.</p> <p>In order to develop member state roadmaps, the RESAP could provide a foundation, but what is required is analysis and technical advice on a country-by-country basis. Research of national statistics and data would have to be generated to inform this, some of which would be primary research.</p>
Impact	<p>The RESP has raised the profile and desirability of RE in the region, however it faces competition from other business interests at the level of individual member states – for example current gas and large-scale hydro speculation.</p> <p>There has been some success in awareness-raising about the existence of financial opportunities available for promotion of RE and EE, but not sufficiently detailed information has been supplied that could inform policy-making at regional and national levels. Significant finance is available from private investors, the Green Climate Fund, the UNFCCC's Clean Development Mechanism, and many more, and the RESAP has the potential to go a long way to defining exactly what these opportunities are on a country-by-country basis.</p> <p>Conceptualisation of the RESP as a whole is weakened by the fact that there are no clear definitions of what is meant by RE, modern biomass and biofuels, in the SADC context. Hence it is difficult to identify exactly which technologies to pursue and which policies to design to facilitate their dissemination. Likewise, the role of the private sector is not clearly articulated in the RESP and too much emphasis is given on government. SAPP experience is that presentation of regional projects at investor round tables could be challenging, and there needs to be a more co-ordinated and thorough attempt to attract private sector investment.</p>

Sustainability	<p>Given the lack of buy-in from governments, it would appear that the RESP and RESAP both rely on support by the ICPs, both financial and technical, for progress.</p> <p>SADC has not appointed an energy expert yet, and the TA is often involved in non-RESP related work to fill this gap. Similarly, the recruitment of a biomass energy expert that was mooted under the GIZ-ProBEC collaboration with SADC has still not taken place, although the ProBEC ended in December 2010. Hence, it is doubtful that the RESAP will continue unless it is a funded position.</p> <p>Capacity building and human resources in EE and RE at SADC and at member state level is needed.</p>
Co-ordination, complementarity, coherence	<p>Communication around the RESP between member states, between SADC and member states and ICPs and between ICPs has been weak. Initiatives of this kind could be strengthened by the use of research and professional bodies to drive the process.</p> <p>There are several other initiatives and ICPs that could feed-into the RESAP framework, but these are not reflected - a summary outlining the synergies between them would be useful.</p>
Value added	<p>The RESP has put the pursuit of RE and EE on the agenda of governments, as evidenced by it featuring on the agenda of energy minister's meetings. It has also provided ICPs with a foundation for designing their own RE programmes. However, more could be done and this process needs to be driven by SADC.</p> <p>Overall, providing support to the RESP has provided the MFA with an important and strategic position amongst ICPs active in the SADC RE sector.</p>

Overall, RESP has had mixed impacts on the SADC RE sector. Some of the improvements recommended can be implemented in the short term. However, some of the challenges noted may require a long period of time in order to address them accordingly. For the remaining period, it is vital that RE and EE roadmaps be developed with Member States that have committed to the programme. To ensure that institutional memory is not lost, the role of a functioning website should be expanded so that it becomes a repository of all energy-related information collected thus far. It could also be used by stakeholders as a convenient way of accessing the technical assistance. Fundraising for the recruitment of more experts at the SADC secretariat is essential to maintain any momentum generated thus far and to contribute to an exit strategy.

5 Review of the Renewable Energy Strategy and Action Plan

5.1 An Evaluation of the RESAP Document

5.1.1 Overall Strategy Theory of Change

Theories of Change have become the norm in the development of monitoring and evaluation plans. The example of GVEP has been selected to illustrate its clear Theory of Change, as with the more elaborate one in the Annex 6, entitled the "Diffusion of Innovations". Theories of Change seek to make explicit the implicit assumptions of development projects for the purposes of project planning and management.

While the SADC Renewable Energy Strategy and Action Plan is couched in terms of 'four pillars', it does not incorporate an over-arching 'Theory of Change.' As a result, it is not clear what the anticipated route of change is expected to be. The existing M&E Framework implies that technology uptake will be based on an 'energy pyramid' in that biomass for household devices like efficient stoves is at the bottom, with a gradual evolution to electricity at the top of the pyramid as it becomes cheaper and the grid is extended. The assumption here is that middle and upper class households and industry make use of grid-connected electricity, and that rural users will use off-grid options until such time as the grid is extended to them.

The document further implies that the least-cost options such as energy efficient, non-electrical cooking devices are a stop-gap until such time as the grid is extended, but elsewhere the RESAP makes it clear that widespread poverty means that already-cheap electricity prices are prohibitive. Costly grid extension programmes thus, may not necessarily ensure the availability of reliable and affordable energy supplies for the majority of citizens. It is similarly only implied that it is necessary to import technologies and expertise until such as time as there is local manufacture of technologies, but the trajectory of this process is not clear.

Annex 6 details an increasingly popular Theory of Change gaining currency in energy planning, called the Diffusion of Innovations¹², based on an impact evaluation framework that has been widely used to describe how social change occurs. Diffusion of innovations is based on thousands of studies and has been used extensively in health, social services, education and of late, in the energy field.

Another Theory of Change worth noting is that developed by The Global Village Energy Partnership (GVEP). It has a very clear Theory of Change with regard to the promotion of renewable energy that might be a useful comparison since GVEP has a similar mission to the RESAP - to accelerate access to affordable energy in Africa, among other regions. For GVEP, the most appropriate technology is usually renewable energy provided by small & medium-sized enterprises (SMEs). The notion of GVEP's theory of change is detailed in Annex 7.

5.1.2 Definitional Issues

At the outset, this document would be strengthened if a list of definitions were provided. What is a low-cost renewable energy technology, for instance, since many of those cited are expensive and large (hydro, geothermal, concentrated solar power). The RESAP seems to be suggesting that differently priced technologies are aimed at different markets: biomass for poor people reliant on coal; biofuels to feed into the transport sector and to replace oil dependency; hydro, wind and solar energy for grid-connected electricity. A sectoral breakdown of energy supply options and demand options might make the connections between these very differently priced technologies clearer.

5.1.3 Relative Roles of the Public and Private Sector

Currently, there is a global trend towards the promotion of renewable energy and energy efficiency which heralds the emergence of many opportunities for developing countries to pursue a low-carbon development path. According to a report "Global Trends in Renewable Energy Investment 2012"¹³, global investment in renewable power and fuels increased 17% to a new record of \$257 billion in 2011. Developing economies made up 35% of this total

¹² E.M. Rogers, 2003.

¹³ The Global Trends in Renewable Energy Investment Report (GTR) is a sister publication to the Renewables Global Status Report (GSR) produced by REN21. The most recent edition of the report, launched in June 2012, is available at www.ren21.net/gsr

investment, compared to 65% for developed economies. The US closed in on China in the race to be the lead investor in RE, with a 57% leap in its outlays to \$51 billion. India however, displayed the fastest expansion rate for investment of any large renewables market in the world in 2011, with a 62% increase to \$12 billion.

One of the dominant features of the Renewable Energy landscape in 2011 was falling technology costs. Photovoltaic module prices fell by close to 50%, and onshore wind turbine prices by around 10%. These changes brought these two leading renewable power technologies closer to competitiveness with fossil-fuel alternatives such as coal and gas. The other key feature was a weakening in policy support for Renewable Energy in many developed countries. This reflected austerity pressures, particularly in Europe, and legislative deadlock in the US Congress.

According to the UN General Assembly report of its Sixty-sixth session, released in August 2011, "New and renewable sources of energy stand at the centre of global efforts to induce a paradigm shift towards green economies, poverty eradication and ultimately sustainable development. Record investments are being made by some countries to propel innovation, development and commercialization of renewable energy technologies... A coordinated global energy strategy needs to be adopted, in conjunction with consistent and stable national policies, to bring down the cost of renewable energy technologies, including off-grid systems, for use by the poorest segments of the population living in rural areas."

The national and regional Development Financing Institutions (DFIs) of developing countries have a critical role to play in mobilizing investments towards a low - carbon, climate - resilient development pathway. The process of designing the proposed Green Climate Fund as defined by the UNFCCC provides a unique opportunity to bring together the DFIs as well as private finance institutions to better understand the complementary and interdependent role that they could play in creating sustainable climate finance architecture.

The Development Bank of South Africa (DBSA) is ready to provide a full package of support to development initiatives within South Africa and the Southern Africa Development Community (SADC) region. The Bank is primarily concerned with promoting the economic integration of the SADC economies, enabling individual economies to use internal resources more effectively and the region to become more competitive in the global economy. One of the funds it administers that could inform policy development in other SADC countries is its Renewable Energy Market Transformation Project (REMT). This is a GEF/World Bank funded project launched to help South Africa eliminate barriers to renewable energy development. The project has two main components namely the Renewable Energy Power Generation (REPG) sub-component and the Commercial Solar Water Heating (CSWH) sub-component. Both sub-components offer matching grants (MG) for capacity-building to assist beneficiaries to identify, prepare, and finance investments and improve their business and market development capabilities. The CSWH sub-component, has in addition to the MG, a performance grant (PG) which supports capacity-building in such areas as will contribute to demonstrable performance improvements such as design, installation and so forth.

Given the widespread support from banks and global multilateral organisations for RE, the RESAP lacks an explicit analysis of the respective roles of the private and public sectors; the interaction between the private sector and public sector seems to be based on the idea that the public sector can guide this process through resource mapping and provision of incentive schemes, and that SADC in particular will guide this process. What is lacking in this assumption is a more comprehensive analysis of the supply chains involved. In the case of biomass, for instance, who will own and manage the resources and at what point in the supply and manufacturing of appliances does the private sector come in. Likewise, efficient kiln technology seems to be aimed at the development of small-scale entrepreneurs that are yet to be identified,

while not taking into account those who already produce charcoal in inefficient kilns from biomass harvested from their own land.

While there is mention of the need for 'commercialisation of technologies,' it is not clear what the route is for the commercialisation of these technologies. While the RESAP does mention the need for an enabling regulatory environment, there is no clear strategy or approach by which the private sector can be involved and its role is depicted in an ad hoc manner. The following extracts from the document illustrate the implied interaction between SADC and the private sector: "SADC prepares the market opportunities in the region for various technologies¹⁴"; "national governments buy down risks for new technologies such as RE by putting in their own money first until commercialisation of technologies¹⁵"; the assumption that funds from a fuel tax will attract private investment¹⁶; that SADC itself will "solicit for investment in the regional manufacturing of such technologies" and that "SADC defines a clear framework for financing of renewable energy technologies¹⁷".

The nature and potential role of public-private partnerships should be covered more comprehensively, elucidating the timing and investment and oversight roles of each. The assumption seems to be in the RESAP that the public sector sets the pace and that the private sector follows, when the increasing prevalence of multinational companies in the region is a clear indication that the private sector moves faster than the public sector and that benefits and resources stand to be commandeered by private sector interests. In this sense, it lacks complementarity and coherence.

5.1.4 Resource Potential and Quantification

The document would be strengthened by depicting the breakdown of the region's anticipated energy supply by resource type - wind, hydro, solar etc. Likewise, a sectoral breakdown of consumption depicting the consumption of energy by sector would be helpful, as demonstrated in the graphs below from Statistics South Africa. On this basis, the energy produced by renewable energy technologies and their anticipated consumption by sector, would be an aid to energy planners.

¹⁴RESAP (draft), 2011 page. 16.

¹⁵Ibid, page.24.

¹⁶Ibid, page 28.

¹⁷Ibid, page 19.

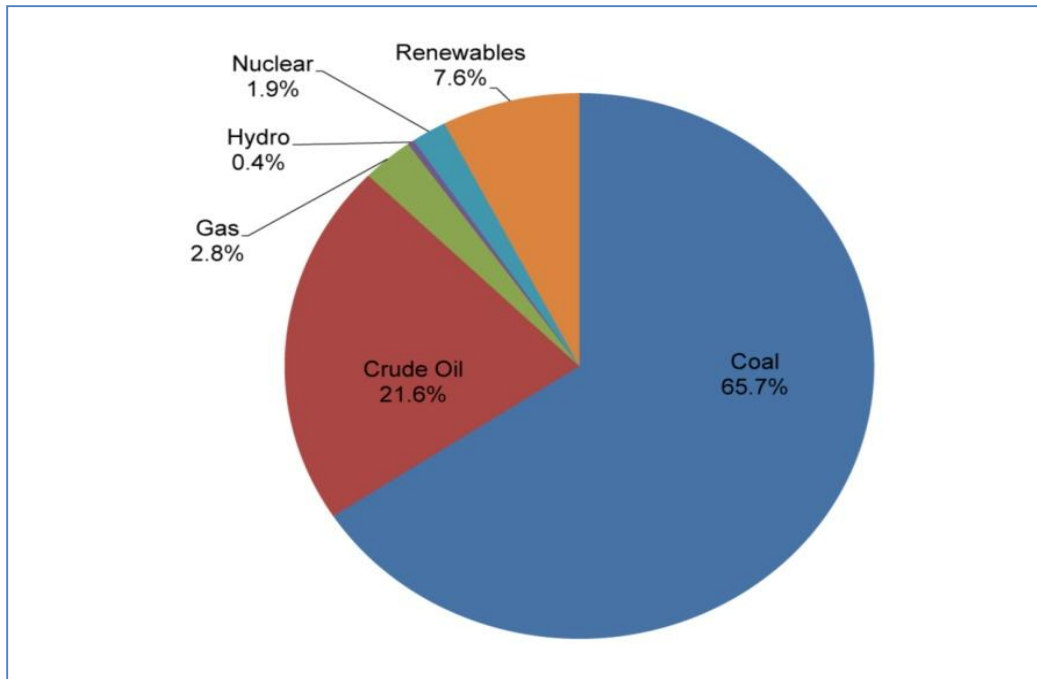


Figure 5.1: Energy resource contribution to primary energy supply in 2009 (DoE, 2010)¹⁸.

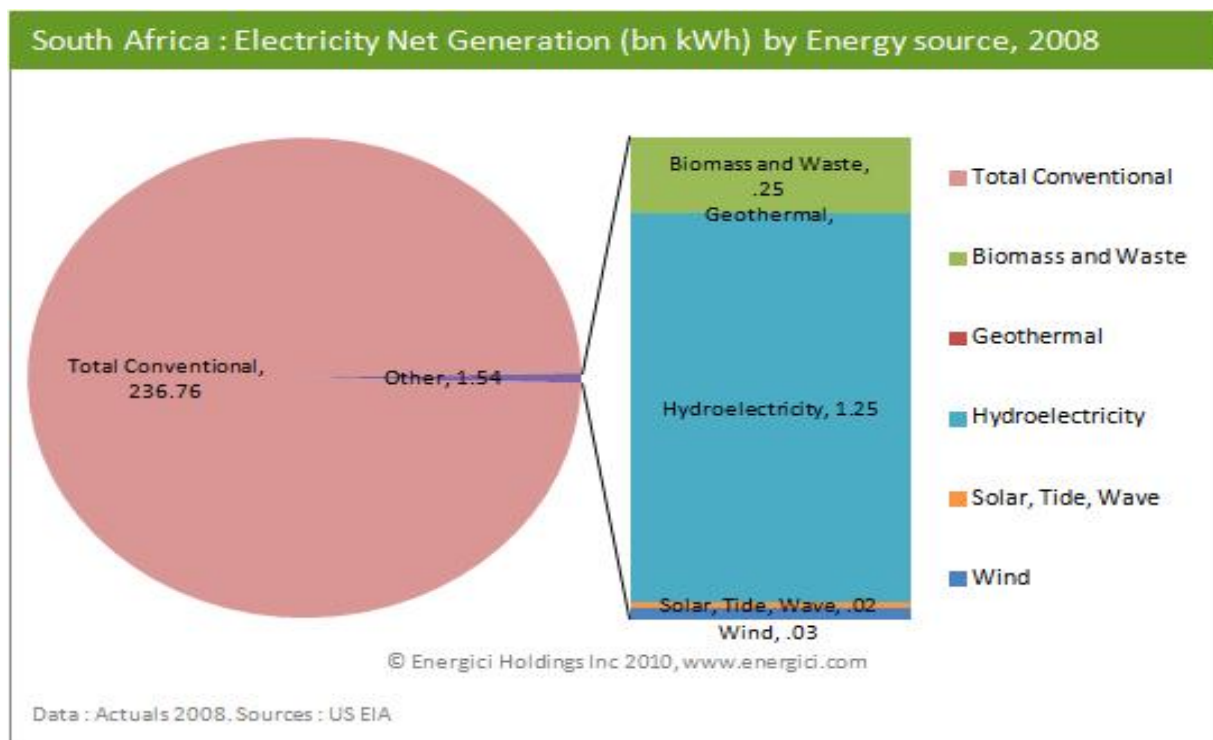


Figure 5.2: Electricity Net Generation (in Kwh) by Energy source¹⁹.

¹⁸ www.iea.org/stats/pdf_graphs/ZATPESPI.pdf

¹⁹ www.iea.org/stats/pdf_graphs/ZATPESPI.pdf

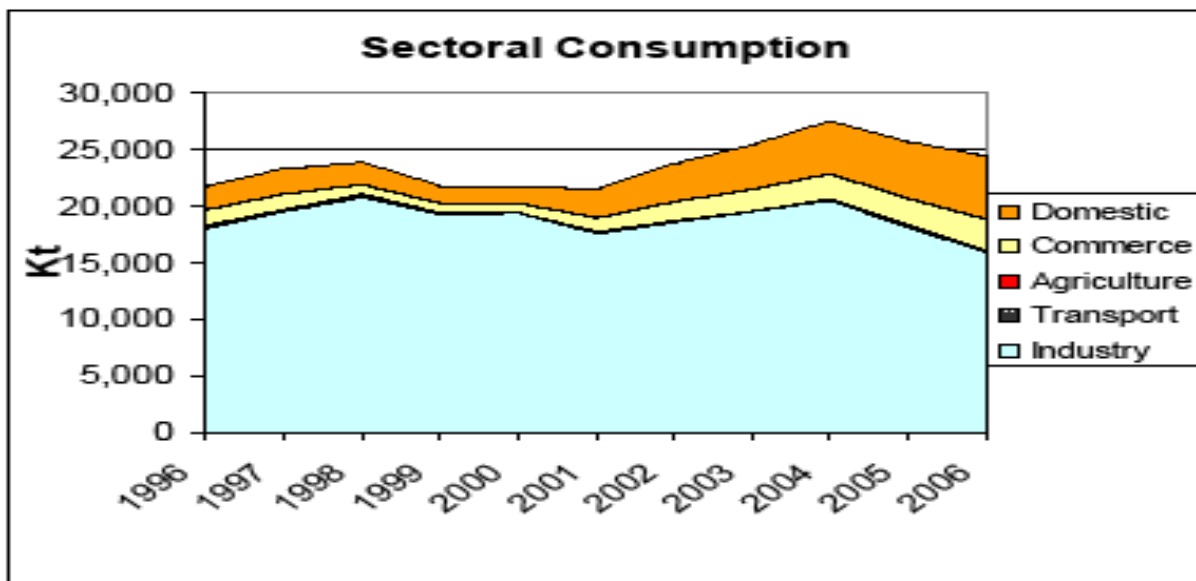


Figure 5.3: Sectoral Consumption of Coal, 2009.²⁰

While figures are provided for solar energy potential, it is necessary to disaggregate the share of modern biomass that is not renewable. While the RESAP highlights that data is a constraint in disaggregation, and that mapping of resources is required, preliminary data is available on a country-by-country basis. Moreover, there are some inconsistencies in the stating of renewable energy potentials. A clear distinction should be made in terms of the energy resource potential and the power generation capacity potential, recognising that power and energy are not the same.

There is no mention of resistances and barriers to uptake of technologies by users. A discussion on the current levels of awareness of RE technology and its benefits among decision makers and potential users would give an indication of how long it would take for such technologies to be fully commercialised. Many of the technologies require certain behavioural changes which could be facilitated by private sector marketing and/or public sector educational drives

5.1.5 The Role of Energy Efficiency

The role of energy efficiency is mentioned very briefly in terms of the potential for demand-side management energy savings. However the timing, implementation methods and role of power utilities are not outlined. In the case of smart grids, the lack of information technology and infrastructure required to operationalize such a sophisticated system is overlooked and seems somewhat ambitious.

5.1.6 Gender and Other Cross-Cutting Objectives

The RESAP presents the issues of gender and other cross-cutting objectives as a separate pillar, while it should be mainstreamed into each aspect.

“Gender” is not integrated into the RESAP and is merely presented in terms of acquiring “male and female” perspectives. It can be assumed that such ‘perspectives’ would be derived from a

²⁰ www.iea.org/stats/pdf_graphs/ZATPESPI.pdf

gender-based audit of energy needs. However, such a survey should take into account that the baseline is a male dominated one, therefore requiring the addition of female requirements and insights rather than the balancing of the two.

While the RESAP calls for integration of 'cross-cutting' issues and planning, it does not specify which departments in particular are relevant. It would be useful if each government department was listed. For example, in the case of biomass, forestry departments and natural resource planners play a central role, particularly to ensure that there are determined efforts to harvest woodlands sustainably and cultivate plantations to replace diminishing stocks.

Food security is not mentioned at all, and this is particularly controversial with regard to biofuel exploitation. In the case of biofuels, the tension between the needs of growing feedstocks for fuel and for food is noted but credible and best practice options are not explored - for example, the role of agricultural departments and potential for introducing conservation agriculture could be elaborated. Agriculture departments have a role to play to ensure that sufficient food is cultivated domestically and that markets do not encourage crop switching to the detriment of food stocks. In South Africa for example, it is prohibited to make biofuels from maize. Similarly, in Mozambique, there is an initiative in conservation agriculture that introduces three crops to peasant farmers to be cultivated by rotation, thereby ensuring there is always a food crop to be harvested. In addition, the MFA had stipulated the inclusion of the Strategic Environmental Assessment (SEA) approach at the outset. However, this was not adhered to.

5.1.7 Timeframes

Many of the activities in the framework in Table 7.1: M&E Framework for the Least-Cost Technology Option in the RESAP are based on the assumption that 'capacity exists within Member States'. However, the timelines indicate that implementation is expected by as early as 2013, which would be unrealistic and unattainable given the limited capacity to implement that exists in the region.

5.1.8 Development of Local RE Manufacture

The strategy does not cover any components encouraging the development of local content or local manufacturing capacity within the RE implementation process. This could be crucial to spreading benefits around the region, particularly to those member states that do not have immediate competitive advantage over others. Likewise, if certain components are made in one country, they can be exported to a manufacturing concern of another country, thereby cementing regional integration and bringing down costs.

5.1.9 Incorporation of Stakeholder Comments

Finally, several comments from the stakeholder review process are not included within the final RESAP document. In the minutes of the Third Steering Committee Meeting, the following modifications were suggested but not incorporated within the RESAP document:

- It was noted that the proposed and agreed targets for RESAP (RE/EE) enhancement in the SADC energy sector were considered very modest however, these were not adjusted.
- The monitoring and evaluation framework should also include how many resources (e.g. persons, funding) in SADC will be needed to carry out the various activities. This should also include the resources of other relevant stakeholders such as SAPP and RERA, which are mentioned in the strategy. This however, has not been included.

- Gender issues have been discussed in the RESAP, but should be considered more extensively and concretely in the relevant points of the strategy.

In the minutes of the RESAP consultative workshop held on Thursday, 15 December 2011 in Gaborone, the following amendments were suggested but not adhered to:

- The purpose of the strategy is to improve energy access and fulfil the need for industrial development in the region. Instead, the RESAP document states that the 'global objective' is 'sufficient, reliable and least cost energy services for economic development and poverty eradication'. It must be noted that least cost energy services do not necessarily ensure energy access and so there is ambiguity here in the overall objective and in the definitions of access and provision of energy services.
- The political environment at a country level, specifically the political will of Member States to implement strategies, is not mentioned. Overall, there is little analysis of which Member States are already embracing the extension of energy access where required, or embracing the uptake of RE. The RESAP does not include political analyses of this kind considering that the deployment of technologies does not occur in isolation of political dynamics.
- Clarity was needed on the time period as the 2030 target seemed too long in the future. It would appear the RESAP takes as its starting point the South African Integrated Resource Plan (IRP) of 2010, which is arguably inappropriate since South Africa is more industrialised and technologically advanced than other SADC countries, while also having achieved almost 80% electricity access. In other words, the baseline and circumstances are simply not comparable and not suited to the wholesale adoption of targets.
- Recommendation was made for the strategy to clearly demonstrate what was needed for the first 5 years (including that which needed to be addressed immediately) as this is useful to inform ICPs and hence a potential funding stream. A revision of the structure and time schedule is therefore, outstanding.
- It was highlighted that the emphasis for most of the activities was up to 2015. It is arguable that the strategy should be more pragmatic, as it may not be realistic for all activities to be completed by 2015.
- There was a request for a special chapter to address the specific needs of Small Island Developing States (SIDS) such as Mauritius and the Seychelles or other relevant country groups. However, this has not been accounted for in the RESAP.
- SAPP experience argues that the presentation of regional projects at investor round tables could be challenging, yet in several instances in the RESAP this is mooted as the best way to solicit the interest of the private sector.
- The strategy should identify concrete targets for R&D related activities. A target of 1% of GDP was agreed upon.
- Member States should each submit an outline of how stakeholder buy-in was conducted in the various countries. Stakeholder buy-in reports by Member States were due by the end of the 3rd week of March 2012. It is not clear how many of these have been received, or if they were referred to in the RESAP redrafting. This needs to be addressed to ascertain the extent to which a convincing participatory approach was used.

- Member States should submit a list of potential projects from their countries. It was recommended that projects with Member States commitment should be considered.
- SADC developed biofuels sustainability criteria, with the suggestion that these be incorporated within the Action Plan. However, this does not seem to have been incorporated in subsequent versions of the RESAP.
- In May 2012, the RESAP was presented to donors and it was agreed that VTT's Technical Advisor would document the comments made by all those present into a table format, so that the suggestions could be discussed at a Steering Committee meeting.
- There is no implementation plan and budget submitted with the RESAP.

Overall, the strategy seems to be vague and action plans contained therein not sufficient to support rapid implementation, particularly given SADC's limited ability to influence policy changes in the region due to the perceived dominance of national interests over regional ones. For a renewable energy strategy and action plan in particular, the document should describe the following items in a logical sequence, and in this case, preferably by country for the RESAP document to be considered a strategy:

- Electricity demand
- Technology availability
- Financial conditions
- Economic conditions
- Institutional resources
- Infrastructure
- Risk (technical, financial and institutional)
- Sensitivity (define project/option viability and parameters) and political will.

In short, the RESAP document does outline potential pathways for developing SADC's RE potential and highlights key issues to provide sufficient vision for the region. The background document is useful and provides a large amount of vital information and context, providing the basis upon which SADC and its Member States can begin to tackle the challenges of RE development. However, the RESAP requires additional work to make it viable, in particular around outlining the individual requirements of each Member State in order to ensure its successful implementation. It should be explicitly recognised in the strategy that each Member State faces different barriers and constraints to moving forward, and that these need to be addressed as such. Depending on the Member State, it will only be viable to implement the recommendations in 1 to 5 years. In this context, stakeholders considered the targets outlined in RESAP to be over-ambitious, particularly considering that the political buy-in that is essential for successful implementation, is yet to be fully established.

It would be useful if the RESAP grouped countries with typical / similar conditions (geographical, political, climate change and energy deficit risks etc.), such as with the Small Island States. Such a grouping exercise could inform the development of capacity building plans.

Key issues concerning the RESAP relate to implementation, ownership and enforcement of the recommendations contained in the strategy. There should be an outline of steps that need to be taken in order to unlock these opportunities, including how SADC and its Member States can raise funds to support RE project development to ensure long-term sustainability. Major projects would need financial and technical support from the region and ICPs.

5.2 Evaluation of the RESAP M&E Framework

The M&E Framework stands apart from the rest of the RESAP and its scope and purpose are not made clear. There is no clarity on whether it is designed to be a management tool to assess if targets are being reached and to improve supervision of the project, or if its scope is broader and would be used to balance learning requirements or ensure accountability (to donors, governments and service users) or if it is to be used for fundraising.

As part of the RESAP consultation, site visits were conducted. However, the missions did not make any observations on what kinds of reporting systems are already in place. The M&E Framework does not include a situational analysis of the lack of existing systems or procedures in place and has only made a passing reference to South African targets based on its Integrated Resource Plan 2010. It suggests that Member States report to SADC, however there is no M&E repository in SADC, and there is no clear indication of which department in SADC would co-ordinate such reporting systems. There is generally a scarcity of management information systems in SADC. There is no reference to human resources systems or any other systems that might influence (or be influenced by) such an M&E system. It is crucial to know how different people and departments within a complex organisation use the current system however, there is no strategy in place for using this information once it is generated.

The technical logistics of information collection and generation needed for such a large M&E framework needs further elaboration. Given that a RESAP of this nature covers a number of different countries, and that country work might be broken down further into programmes and projects that are often implemented through partner organisations, it is necessary for there to be a description of where the M&E framework will sit and at which levels plans will be made and/or information will be collected, analysed, summarised, shared and used. A clearer delineation of the information flows, both upward and downward from SADC to Member States and back, is required. This usually involves a series of overlapping and interlocking M&E systems at different levels, with information and analysis flowing between them. Data storage is crucial to an effective M&E system, and given the staff and resource limitations at the SADC secretariat, it is not clear how information will be stored and retrieved at different levels.

The M&E framework appears to be based on an assumption that capacity and resources exists within SADC bodies and Member States to develop M&E supporting processes. This is a vast undertaking essential to the effective implementation of an M&E system, and includes how people are trained and supervised, how information flows between different people, how information is reviewed at different levels and how an organisation deals with the reporting of mistakes and failures. Despite this, there is little consideration of the practical issues involved: the resources required to implement and maintain an M&E system, including the personnel and finance available to undertake M&E work.

Experience from a wide range of different complex organisations suggests that is the single most important consideration that will affect the success or failure of the new M&E system is consultation with a variety of different stakeholders. It appears that the M&E framework has not yet been presented to SADC or to the Member States and hence their needs and commitment to the process have not been addressed.

Ultimately, the RESAP should clearly articulate "Who" will do "What" and "How" will they do it, by "When" - this would go a long way to connecting each country's role to the overall framework.

5.2.1 Refinement of the M&E Framework

The recommendations concerning the M&E Framework are divided into two sections: the refinement of the M&E framework itself; and the elaboration of a Theory of Change.

5.2.1.1 Refinement of the M&E Framework Country-level roadmaps

With the current M&E Framework in the RESAP, there is a concentration on the vision, mission and main working approaches described at a regional level. Further development is needed at a country level, since this is where the 'road maps' will be developed, based on strategic plans that will require reports to be generated on a regular basis. This should be done according to thematic programmes based on a clearer Theory of Change, than the current 'four pillars'.

Thematic programmes

Once thematic programmes have been identified, they can be divided into projects that are implemented by partners (research bodies, SAPP, RERA, private sector, civil society, etc.). Each separate level will have its own cycle of planning, monitoring, evaluation and reporting processes, and these cycles together can then be combined to form the regional M&E framework.

In developing and selecting the key thematic areas, it is possible to develop an overall framework that clearly identifies where everyone has to do the same thing, and where there is flexibility for independent approaches. More commonly, organisations develop broad indicators at a global level, and expect regions, countries, programmes and projects to set successively more detailed indicators at lower levels. Indicators at lower levels are then captured, summarised and analysed at higher levels, as well as at the level they are collected.

The incorporation of a table such as Table 5.1 below could provide a clearer explanation of the roles and responsibilities of the different role-players in an M&E system. If the RESAP M&E framework was expanded to provide this level of detail, it will ensure a consistent approach to the collection, analysis and use of information, whilst allowing considerable scope for different country's to develop their own solutions in response to their own particular situations²¹.

While specific targets have been presented as actual percentages in the RESAP, it is not clear if these targets refer to the SADC region as a whole or to individual countries. As the measurements are currently presented, it is difficult to ascertain if they refer to country or regional levels. Most commonly, indicators are defined in broad terms at higher levels, such as at the SADC level, and they then become successively narrower and more focused at lower (in this case) country levels. The information gathered at lower levels can then be collected together and summarised at the SADC level.

It is recommended that indicators at the SADC level comprise broad objectives based on the Millennium Development Goals (MDGs), and then at the country level reflect national targets. This would also enable SADC to illustrate change at a regional level, while the information is actually collected at country and even further down at individual project levels. This might involve staff at lower levels mapping their indicators onto the SADC higher-level indicators. It would also be useful to develop milestones to show progress towards the targets. It is also helpful if the indicators contained concrete numbers (e.g. number of people trained) or metrics that are measurable. While several measurements and indicators have been specified, there is

²¹Simister, N. (2009) Developing M&E Systems for Complex Organisations. International NGO Training and Research Centre

no reference to the baseline data against which they will be measured, hence making it impossible to measure progress towards the overall targets.

It is recommended that standard baseline data gathering questionnaires and methodologies be developed and then be piloted by way of field-testing in-country. On this basis any necessary adaptations can be made and baseline data collection can be tailor made for each country. At the same time, this can ensure that some of the questions relate to SADC's core indicators that have to be applied across all countries and programmes. This will allow for some central coordination in order to summarise data, while giving flexibility at the country level to accommodate for Member State geographical and cultural specifics, as well as data gathering capacity.

Throughout the RESAP M&E framework, the 'means of verification' refers to 'Member States annual reports' or simply 'reports'. In order for such reports to be useful and comparable, they have to be standardised between countries. Developing new reporting formats, removing old ones or adapting existing ones always requires wide consultation, and it is recommended that further training and capacity building be provided on reporting systems for relevant staff at Member State level.

Local staff often resent the M&E demands placed on them from above, and in this case they might not understand the pressure that Secretariat staff might be under to acquire funds or manage constitutional relationships with different stakeholders. For this reason it is vital to introduce data gathering methods, toolkits and reporting needs in a consistent and structured way, that also outlines the value of such activities in ensuring accountability.

It will also be necessary for a database to be developed, with adequate information and knowledge management systems. Staff at country level will need short and discrete explanations of M&E policy, procedures and practices, as well as user guides, tools and methodologies used. A central repository of information is needed at SADC level to manage all these reports and to encourage information exchange. This can facilitate the storage and efficient retrieval of institutional knowledge and the compilation of best practice examples.

It is recommended that further consultations be held with relevant stakeholders to ascertain their acceptance of the M&E framework and their willingness to comply with reporting requirements. This can be divided into two stages. Initial consultations should be held with Member States to assess their needs and expectations of the new M&E system. Later on, a smaller group of stakeholders will be needed to provide detailed input into the design of the new system.

In summary, the programme will need to be described in more detail through the development of a logic modular logframe with a results chain, which does not exist in the RESAP framework as it stands. Given the broad scope of the programme, it is also necessary to clearly differentiate the different target actors. There are multiple domains or 'areas of activity' in this regard — awareness raising and educational bodies; public policy or nongovernmental organizations, industry/business, end-users — and multiple participants within the domains.

From an evaluation perspective, the logic should include an examination of how the programme relates to each domain. Having done this, the evaluator can then identify the domains and the roles and relationships on which an evaluation would focus. Since the RESAP is partnering to leverage the activity of business as indicated by its private sector roundtables then the evaluation needs to focus on how the programme influences its partners. The use of the following table would map the different actors involved.

Table 5.1: Example of Mapping Actors in Four Domains

Knowledge Firms	Policy Makers and Public Entities	Manufacturers / Businesses	Energy End-Users
Laboratories	Regulatory commissions	Materials suppliers	Households
Universities	Member State energy offices	Maintenance contractors	Commercial building owners
Research labs	Member State regulatory officials	Product manufacturers / importers	Tenants in commercial lease buildings
Consultants	Legislatures	Distributors/wholesalers	The buildings of retailers
Media specialists	Regional energy organisations such as RERA	Utilities	The facilities of industrial firms
Web developers	NGOs	Retailers/builders	Vehicle fleet Managers – for fuel tax
Modellers	Community organisations	Architects	Relevant industries
	SADC	Engineering consultants	
	Manufacturing	Specifiers	
	SAPP	Service providers e.g. auditors	
	RERA	Installers/contractors	

A mapping exercise will provide a good basis for the design of an M&E Framework as well as an impact evaluation. A logframe and domain map must include a clear statement of the goals, objectives, and strategies associated with a programme. The goals should be clearly stated in a “what is expected to be accomplished by when format.” A good description of the programme tells how the “what” is to be reached in the expected timeframe, and makes it easier to identify the aspects of a programme that need to be evaluated.

5.2.1.2 Elaboration of a Theory of Change

It is recommended that an explicit Theory of Change be developed that outlines how renewable energy technologies will be deployed into the region. An appropriate and credible one that is appropriate for the RESAP is outlined in Annex 5.

6 Summary of Challenges Facing the Programme

6.1 Summary of Key Challenges

A summary of the key challenges currently facing the RESP is provided in the table below.

Table 6.1: A summary of the key challenges facing the implementation of RESP in the SADC region.

Issue	Key Challenge
Roles and Functions Within the Renewable Energy Support Programme to SADC	
General	<p>Generally low profile of RESP in the region, given limited on-going engagement with key and relevant stakeholders in the region. Therefore, a lack of clarity on the aims of the programme and the role of various stakeholders in its co-ordination and implementation is evident amongst stakeholders. In such a context, the RESAP could be used as a tool to co-ordinate activities and actions of various stakeholders in the SADC RE sector.</p> <p>From the SADC perspective, there is a perception that ICPs have significant influence over the energy sector in the region. In many instances, ICPs determine what kinds of projects and programmes are supported. The key concern here is that the partnership between SADC and ICPs is at times, not conducted on the basis of an egalitarian partnership.</p>
Technical Support	<p>There is a perception that the technical support provided for, only targets the regional office and does not filter down support to Member States, who also require capacity around RE issues and support with developing appropriate policy, regulatory and financial mechanisms to further the RE agenda.</p> <p>An internationally-driven support programme is also seen to pose a challenge in addressing RE issues in SADC. The RESP needs a wider spectrum of local consultants that are representative of Member States and understand local and regional contexts to complement the international expertise provided.</p> <p>The technical qualifications of a focal person for a programme such as this should be weighted to skills in political planning, advocacy and policy development rather than scientific knowledge of renewable energy technologies and energy efficient measures per se.</p>
Governance	
SADC Institutional Landscape	<p>Inconsistency between regional and Member State decisions which suggest a lack of political will to implement or enforce the agreements made in current protocols. As a result, regional projects take time to develop and move forward. This suggests that SADC as an institution does not have the requisite power to influence decision making at the Member State level. However, SADC has a huge role to play in the promotion of regional programmes such as the RESP in the region.</p>
Regional Integration and Co-ordination	<p>Limited regional integration is a huge challenge in servicing projects that are to benefit the region. This as result of the promotion of national interests above those of the region. For example, utilities are currently not keen to co-operate as there is competition in the regional markets</p>

Issue	Key Challenge
	<p>amongst the relevant Member States. They are, however, starting to become more co-operative.</p> <p>A sanction against certain Member States by ICPs has been highlighted as one of the key factors in hindering the development of regional projects. The concern here is that ICPs might withdraw support from some regional energy projects and programmes if one or more of the sanctioned countries are involved in those projects.</p>
Capacity and Resources to Implement RESP	<p>SADC currently has no budget to implement the actions and prescriptions contained both within the RESP and RESAP, or to participate in co-ordinating the implementation of programmes, given limited internal capacity. At present, SADC's capacity is limited to the role of facilitator, as opposed to implementer of regional programmes. Although the Directorate of Infrastructure and Services has been identified as a priority area for SADC's intervention, within this portfolio the transport sector has been afforded higher priority than the energy sector. Moreover, due to the impacts of the recent economic recession, SADC implemented budget cuts in all departments including priority sectors.</p> <p>SADC also struggles to implement programmes due to its institutional structure where most decisions made are top-down. As a consequence, there is usually little co-ordination with the relevant ministries responsible for administration in Member States.</p>
RE Awareness	
Lack of data, knowledge and local expertise on RE.	<p>Lack of recognition of which countries have competitive advantage in which RE resources or technologies. There is no distinction made between immediate and long term RE opportunities for Member States. Regional strategies like the RESAP should include this in order to provide direction to both Member States around what is possible in their country and to investors around potential project types and their readiness for commercialisation.</p> <p>Lack of particular knowledge in financing, construction and maintenance of RE technologies.</p> <p>There is not enough emphasis on how appropriate policy frameworks will be developed in order to support the implementation and development of the RE technologies. There is also need to develop local capacity at both a government and community level to promote awareness around RE.</p>
Stakeholder Engagement and Communication	
General Communication Channels	<p>Generally insufficient contact with stakeholders particularly at the SADC member state level to provide on-going input into future programming needs.</p>
Involvement in Development and Implementation of RESP	<p>Lack of involvement of key regional institutions such as RERA and SAPP in the formulation and development of RESP. This has meant that additional support to SADC in tackling RE issues from its subsidiaries, has not been fully utilised.</p>
Involvement in the Formulation and Development of RESAP	<p>Due to the nature and the manner in which RESAP was formulated, not all key stakeholders and relevant government ministries were intricately involved in the strategy development process in its entirety. As such,</p>

Issue	Key Challenge
	<p>there is an apparent lack of common understanding regarding the objectives of RESAP and its alignment to existing activities, mandates, roles and responsibilities, as performed by other actors active within the RE sector. The following views have not been adequately captured:</p> <ul style="list-style-type: none"> • Implementing agencies in Member States have not been fully included in this process. The utilities needed to be more involved in the process as they are important implementing agents at the national level. • Members of civil society and private financiers were also not consulted in the development process but could have provided invaluable input to inform strategies/recommendations contained within the RESAP. • The RESAP at present, has had limited influence on decision making at the Member State level. This is due in part, to a perceived limited involvement in the strategy's development, particularly, on details of what RESAP is trying to achieve in the region and the Member States' role in those plans. The main concern here is that Member States were not sufficiently engaged in initial decisions taken leading to the formulation of a strategy for the region. That is, a common understanding and shared objectives were not established from the outset, which has led to a slight apathy towards the RESAP from certain Member States. • The MFA insisted at the outset that an SEA approach be adopted, but this was not adhered to. There are several other instances where suggestions were made at ICP and Energy Ministers' meetings, and these were not included in amended version of the RESAP.
Implementation of RESAP	
SADC	SADC Member States are currently not providing information to SADC for use in the strategy. The majority of the Member States do not have the capacity to collect and provide relevant data. This in turn, impacts on SADC's ability to support implementation given other constraints mentioned in the sections above.
Member States	The different development stages of each member state should be recognised. The support programme and strategy thus need to be tailored in accordance to each country's current capacities and resource potential. Some Member States will be able to implement suggestions contained in the RESAP, but others are unlikely to be able to do so.
Finance	
Sustainability	A withdrawal of financial and institutional support from the MFA to support RESAP would likely result in the discontinuation of the programme. At the SADC level, proper succession plans are necessary to ensure the sustainability of similar programmes in future.
Access to Financing	One of the main challenges that has been noted in the region are difficulties in accessing soft loans or grant funding, which often reduces the motivation of both the private sector and government to develop RE projects and programmes. Regional stakeholders often do not have the full information and expertise required to develop bankable projects. In the long term, the identification of the most successful financial mechanisms (such as feed-in tariffs, subsidies, soft loans etc.) relevant to each country or regional context, need to be identified. This should

Issue	Key Challenge
	include efforts to mainstream these mechanisms into national renewable energy strategies to provide the required incentives to allow entrepreneurs to invest in renewable energy, particularly within private-public schemes if initiatives such as RESP and RESAP are to be fully supported on the ground.

6.2 Key Lessons Learnt

There are many opportunities to develop RE in the SADC region. However, this potential is yet to be fully realised due to a number of factors. This section summarizes key drivers for the successful introduction and implementation of regional energy programmes. This summary is based on the collective experience of the stakeholders consulted in their involvement and implementation of regional programmes and projects. The following were highlighted as key lessons learnt and have been grouped into three key categories namely, the local context of RE development in SADC, institutional mechanisms and capacity building and local content development and regional skills development and transfer:

The local context of RE development in SADC

- Planned interventions in the region should understand the local context in which regional RE support programmes and projects are introduced. A one size fits all strategy does not take into account that support to the regional energy sector needs to be grounded in local realities and contexts. In the case of SADC region, support needs to be tailored to the needs of both the SADC Secretariat and to each member state. This is primarily due to the fact that resourcing and capacity requirements are differentiated for each of the stakeholders concerned. In order to guide RE development effectively, each member state needs a tailor-made resource plan to maximise on RE opportunities. National resource plans also serve to provide guidance to investors on RE opportunities that currently exist in the region.
- Political will, is a key factor in the successful implementation of regional energy programmes. In order to garner support for regional programmes or projects, establishing stakeholder buy-in is an important, yet often neglected element of successful regional interventions. Stakeholder buy-in can be established through extensive stakeholder engagement processes. Therefore, an effective communication channel between all the relevant stakeholders is key to this end. Moreover, communication amongst relevant stakeholders needs to be constant and provide on-going feedback into the strategic direction, aims and objectives of the programmes in question. Stakeholder engagement is critical in establishing support to drive the implementation of regional programmes. However, it is to be noted that communication between relevant stakeholders is not for communication's sake but establishes a common and shared agenda between relevant parties. In addition, this ensures that the programme meets the needs of all the stakeholders concerned.
- The majority of planned regional interventions in the region focus extensively on connecting large-scale on grid technologies with little or no mention of the potential to develop small-scale and off-grid technologies. As such, the differing policy developments for these two options are not adequately defined or differentiated. This points to a need for future programmes to increasingly incorporate matters pertaining to energy access. This, particularly in light of the fact that it might take longer than anticipated to extend the grid to remote and isolated areas of Southern Africa.

Institutional mechanisms and capacity building

- At present, SADC as an institution has difficulties in issuing mandatory directives to its Member States to drive and support the implementation of regional energy programmes. Unlike other regional institutions such as the European Union (EU) and the Economic Community of West African States (ECOWAS), SADC demonstrates a limited capacity to influence decision-making at national Member State level. There is a need for a detailed assessment and comparison made between SADC and how other regional bodies such as the EU and ECOWAS, operate and manage similar processes at the regional level. The lessons learnt from such an undertaking would give SADC an opportunity where feasible and appropriate, to restructure its operations in order to fully service the needs of the region.
- The prevalence of national interests over regional needs is not the only factor hampering RE development in the SADC region. Limited capacity at the SADC level often poses challenges to effective implementation of regional programmes. The number of activities that the SADC secretariat is responsible for has increased over years but this has not been matched with corresponding staffing, resourcing and financial support to fulfil all those duties. As such, the internal capacity at the secretariat is currently over-stretched. This leads to an inability on the part of SADC to meet the full service requirements or focus attention and resources to any regional programme effectively. In other words, the law of 'diminishing returns' applies to the SADC situation. Meaning that, the addition of new activities does at some point; yield a lower return in productivity and SADC's ability handle large volumes of work. Moreover, the growing list of SADC's "to do" is often disproportionate to existing human and financial resources at the secretariat.
- As a consequence of limited internal capacity, SADC is unable to fully service its Member States particularly in providing advice and guidance on key issues pertaining to RE. Therefore, technical support provided through support programmes such as the RESP ought to also provide support to Member States directly. This can be done through on-going dialogues with Member States to assess where for each country, support is most needed. Once priority areas have been identified, the technical support team ought to also assist countries in identifying and accessing funding opportunities to service those priority areas. It should also be noted that the secondment of one technical expert to serve the role of technical support is considered inadequate in servicing the entire region. It is only when support is offered directly to Member States, can RE sector development be achieved at a regional scale. The key imperative here is that technical support to Member States needs to be simple and prioritise interventions specific to each country.

Local content development and regional skills transfer

- International consultants definitely have a role to play in the implementation of regional programmes. However, there needs to be a sustainable take-over strategy on the part of SADC. SADC ought to be encouraged to co-fund projects and staff costs. The current model of technical expertise being seconded to the secretariat is a good interim measure. However, there needs to be a clear transition plan for succession and the appointment of SADC personnel to increase internal capacity.
- The promotion of local content and skills transfer are also seen to be key drivers of successful programme implementation in the region. However, developing local RE expertise needs to be realistic, moderate and phased in over a period of time. If strategies used to develop regional expertise are too prescriptive, this could act as a barrier to implementation and not allow sufficient time for adequate levels of technical capacity to be developed in

SADC. Therefore, considerable flexibility to borrow knowledge from international best practice and technologies to expedite the development of RE, can be very useful in the short-term. However, experiences drawn from international best practice needs to be adapted to local context and requirements. Regional RE support programmes such as the RESP could provide greater support if international expertise is combined with local knowledge. In practical terms, this means that a technical support team needs to be represented by both local and international consultants in order to draw on various expertise and provide robust technical support to both SADC and its Member States.

In summary, for any regional programme to succeed and meet its objectives, it is of critical importance that the roles of each stakeholder are clearly defined and well-understood by all parties involved. There needs to be a platform created to share knowledge, ideas and experiences so that stakeholders can provide on-going feedback on the different phases of programme implementation. This would allow for speedy improvements and ensure that the renewable energy support programme adds value to both SADC and its Member States.

7 Recommendations and Outlines for Future Planning

The idea of a RESP is valuable and well-timed, since many donors are interested in supporting the roll out of renewable energy in the region, and many Member States are facing power deficits and hence are dependent on importing energy from neighbouring countries, predominantly from South Africa, which has a monopoly on the region's energy supply.

In light of this, it is without doubt that it is of critical importance to continue with the support programme. There is a need and potential to develop RE in the SADC region. The MFA's support to SADC could be of considerable benefit to the SADC energy sector if the support programme is reformulated, and the RESAP is refined. Moreover, the SADC support programme in its focus on policy development complements and is in support of the MFA's work implemented under the auspices of the Environment and Energy Partnership. However, it is clear that implementation of the RESP and the RESAP will be a challenge. This is mainly because the RESAP is not designed as a strategy that would guide implementation. The RESAP is an overview and a framework and this is a limitation that was raised by a significant number of stakeholders, where concern was raised as to how to implement the strategy. A strategy should clearly delineate the respective roles of each party: the role of SADC secretariat, the role of Member States; the role of RERA; the role of SAPP; the role of the private sector. The 'framework', ought to be converted into a strategy.

At this stage, it would appear that the optimal role of SADC would be to concentrate on facilitating the programme's introduction to interested and relevant parties. To this end, SADC could play a critical role in sharing knowledge, linking investors to governments, and in appointing a focal person to provide the critical link between all role players. Implementation will be marred if SADC does not mobilise the resources to appoint in addition to a Technical Advisor, a permanent focal person to ensure continuity at the secretariat. Such a focal person has a vital role to play by staying in regular contact with each country's energy minister and by cultivating such relationships. Ideally, this focal person should be a permanent officer at the SADC secretariat in order to build internal capacity and provide continuity and retain the institutional memory of RE and EE programmes at the SADC level.

The Energy Thematic Group of the ICPs can contribute a co-ordination role, particularly with respect to facilitating donor dialogue and to assist with identifying who the key players are and summarise the relevant projects for consideration in the implementation of the RESP. The focal

person / consultant can play a role in linking investors to projects. For example, IRENA is keen to co-operate at country level and seeks guidance on what to fund, which organisations to approach and what exists on the ground. A focal person with policy planning and advocacy skills could be the link between such initiatives and the resources and personnel available at country level.

Overall, the strategy and the support programme do require additional work, in particular, around implementation plans. Due to differences in national contexts, there is no single plan that will suit all countries. Thus, it should be tailored for each country's political environment with regards to renewable energy resources, level of technology present and technical capacity, maturity of markets and supply chains, prevailing energy infrastructure arrangements and key private and public sector players and projects. Most SADC Member States will need additional funding and resources to implement the recommendations outlined in the strategy. As such, the strategy should also outline how Member States can raise funds to further the goals of the RESP and RESAP respectively.

The following key recommendations can be considered in order to maximise on the existing support provided by the MFA through the RESP.

Issue and Area of Intervention	Key Recommendation(s)
Stakeholder Involvement and Engagement	Key regional institutions (particularly SAPP, RERA and the DBSA) and civil society should be consulted since they were overlooked in the initial design of the RESP and RESAP, respectively.
	The private sector has a role to play in project development and in the mobilisation of expertise and finances. However, such investors need an enabling policy environment to be in place, and appropriate policies and incentives could be promoted to SADC Energy Ministers by the focal person managing the SADC RE support programme.
	The Technical Advisor needs to play a more active role in promoting the programme and the development of an advocacy strategy, along with the SADC secretariat could ensure broader participation and support for the programme. The VTT technical support team should be encouraged to pursue those stakeholders who have not submitted buy-in reports and actively lobby them for participation in the programme.
SADC RE Support Programme (RESP)	The existing logframe needs to be reviewed and reformulated as it is unclear on timelines for the completion of milestones and the roles of various stakeholders (MFA, SADC, and the Technical Advisor) in its delivery. The reformulated logframe document ought to complement the MFA's EEP programme and other regional and global RE initiatives.

	<p>Should a reformulation of RESP be undertaken, the logframe of the RESP Programme Document should indicate that the aim of the RESP is to build RE and EE capacity of both SADC secretariat and the Member States, by developing their knowledge of applicable renewable energy resources and technologies. The logframe should be redeveloped into a results chain that clearly delineates programme inputs, activities, outputs, results and impacts.</p> <p>This new format should be employed for each of the three programme components: 1) development and implementation of the SADC RE and EE strategy; 2) Technical and Administrative Support to the SADC Secretariat's Energy Unit; 3) Enhancing Institutional Capacity in the field of RE and EE in Southern Africa.</p> <p>There is a need to re-examine and provide clarity on the role of the MFA, SADC, ICPs and technical support, including the role of key regional institutions such as RERA and SAPP in supporting the programme going forward and their representation in the RESP Steering Committee.</p>
<p>Renewable Energy Strategy and Action Plan (RESAP)</p>	<p>The RESAP document needs to be refined. However, the role of SADC, the VTT technical support team and MFA needs to be discussed in great detail prior to the refinement of the RESAP. For the remaining period, it is advisable that national roadmaps be developed with Member States that are keen to commit to the programme.</p> <p>The "four pillars" approach could be incorporated in the refinement of the RESAP. It is advisable that a Theory of Change be outlined along with such a re-design process, since this will outline the how the commercialisation of such technologies will happen and the private sector involvement can be stimulated in taking technology diffusion to scale as recommended in the RESAP.</p> <p>Furthermore, the nature and potential role of public-private partnerships could be covered in this way, particularly with regard to the development of local RE manufacturing and job creation. The Diffusion of Innovation models could be a starting point for the elaboration of a Theory of Change in support of the implementation of the RESAP.</p> <p>A sectoral breakdown of energy supply and demand options could be useful too (domestic, industrial, transport, etc.). An implementation plan should be elaborated, along with a budget. A mapping exercise would be useful for identifying the relevant bodies and organisations to be included: knowledge firms, policy makers/public entities, manufacturers/businesses and energy end-users.</p>

	<p>There is a need for a regional capacity building programme and knowledge management facility that could guide each country's road map development, collate feasibility studies, inform investors and duplicate best practice. It would thus be ideal if a local institution such as a university or research institute could be identified to become the repository of such information for dissemination in the public interest.</p>
	<p>A Strategic Environmental Assessment should also be undertaken concurrent to the process of refining RESAP, along with cross-cutting objectives. However, the cross cutting themes to be included in the RESAP needs to be discussed and decided upon in consultation with the SADC Office.</p>
	<p>The implementation of RESAP will be marred if SADC does not mobilise the resources to appoint a focal person with appropriate skills to replace the Technical Advisor.</p> <p>The technical support provided by VTT could continue to play a role in the conclusion of this programme by advising Member States on the appropriate RE technologies and EE measures appropriate for each country, based on its natural resources, policy environment, and technical and infrastructure.</p>
	<p>The M&E framework underpinning the RESP and RESAP ought to be revised both at the regional and country level. A mapping exercise and the incorporation of indicators evaluating the intended impact of the RESAP provides a good basis for the re-design of the existing M&E framework.</p>

Resourcing and Staffing Requirements in support of the implementation of RESP and RESAP	<p>The roles and responsibilities of the VTT technical support team should be clarified and this could form part of the recruitment process for a permanent energy expert based at SADC. At this stage, it would appear that the optimal role of SADC would be to concentrate on facilitating the programme's introduction to interested and relevant parties. To this end, SADC could play a critical role in sharing knowledge, linking investors to governments, and in appointing of a focal person to provide the critical link between all role players. Such a focal person has a vital role to play by staying in regular contact with each country's energy minister and by cultivating such relationships.</p> <p>The technical support provided for now should look more at facilitating partnerships between various players in the region than providing strict technical expertise with limited communication and engagement with intended beneficiaries. At present, the current technical support from VTT has not been able to perform these activities adequately.</p> <p>It should be stressed that technical skills are more valuable in the earlier phases of inception for both the RESP and RESAP. However, for the successful implementation of RESP going forward, a different skills set is required to support the SADC energy sector. That is, as advocacy, policy analysis, communication, knowledge management, networking and stakeholder engagement is more critical in this phase of the support programme.</p>
Knowledge Management and Dissemination	<p>The Technical Advisor as lead representative of VTT could also assist with the identification and selection of suitable and cost-effective RE technology suppliers and compile a database for future reference. Similarly, the website needs to be populated with such useful information, along with other relevant documentation and the technical support programme can be the central node through which information is channelled and collected for uploading onto the web. Technical assistance could be offered through the website if the Technical Advisor also played a role in website administration and responded to queries through a more interactive "question and answer" forum on this site.</p> <p>Other forms of communication should be explored to ensure that knowledge is disseminated amongst the relevant stakeholders. A communication plan should be developed outlining how the SADC RESP and RESAP will engage stakeholders to this end.</p> <p>It is also necessary to identify an appropriate research or academic institute to locate all the knowledge generated in the RESP and RESAP rollout process in order to provide continuity and coherence to RE development plans in the region. This is to ensure that the support already invested by the MFA in the establishment of RESP and RESAP in the region thus far, can be used to maximum benefit.</p>

Proposed Plan of Action

The table below summarizes key actions to be followed in order to improve the RESP as noted in the recommendations above. The recommendations contained therein outline the key tasks to be undertaken, the stakeholders responsible as well as the timelines associated with those responsibilities.

Task	Stakeholder Responsible	Actions Required and Outputs	Due Date
<p>Stakeholder Engagement:</p> <p>To enhance stakeholder participation and interaction beyond consultative workshops, email communication, website and the reliance on focal points as means of stakeholder engagement. The main purpose is to extend the current network of RESP to be inclusive of other relevant stakeholders such as SAPP, RERA, DFIs, IRENA, REEEP, EEP, civil society and other relevant actors in the energy sector.</p>	Technical Advisor/SADC	<ul style="list-style-type: none"> Identify all relevant stakeholders active in the SADC region to be linked with RESP and create a database capturing those details. With input from the MFA, SADC and short term expert, develop a stakeholder communication plan. Publish press releases after meetings, workshops and any other SADC Energy Desk related event informing stakeholders (ICPs, Member States, and regional institutions) of key outcomes and SADC activities. After every SADC Energy Ministers Meeting, refer to decision matrix and extract relevant RE decisions taken for dissemination and devise plan to track and follow up with national focal points. Develop template for Member States to use to formally request technical assistance from SADC as part of RESP. Develop a communication plan identifying other channels for communication between 	On-going Key Outputs due by March 2013

		SADC and regional stakeholders on the RESP and RESAP.	
	SADC	<ul style="list-style-type: none"> Present to stakeholders action plans related to key puts of the stakeholder engagement plan at third consultative meeting of RESAP. 	
Reformulation of RESP (Logframe): The current logframe begins by stating an overall objective as “Increased Capacity in the field of Renewable Energy and Energy Efficiency in Southern Africa”. However, this is the overall objective of the RESAP and not of the RE Support Programme. It is suggested that this overall objective be changed to reflect the aims of the support programme.	MFA/SADC	<ul style="list-style-type: none"> Develop TOR for a consultant to reformulate the logframe by consulting key stakeholders. Key output: Revised logframe document. 	March 2013
Refinement of RESAP: The current strategy is not designed as a strategy and is therefore, not implementable. It needs to be presented as an action plan. The action plan should take into account the resource challenges and procedural processes at the SADC level. The emphasis of the revised strategy should be on SADC energy division's role.	Technical Advisor	<ul style="list-style-type: none"> Develop TOR for a new consultant to refine RESAP. Host a regional workshop to re-launch and re-brand refined RESAP to establish stakeholder buy-in. This may include presentations made in other key regional events and SADC level meetings. 	March 2013
Knowledge Management: Given constraints at SADC with regards to information storage and dissemination of RE related documentation, there is a need to preserve institutional knowledge. This is a result of a high turnover of consultants and the short term nature of secondments.	Technical Advisor	<ul style="list-style-type: none"> Develop a communication plan identifying other means of communication and relevant channels to assist with the dissemination of knowledge within the RESP and RESAP respectively. This is also linked to processes related to stakeholder engagement noted above. Expand the role and content of website where the website can be used as a data repository for interested parties to access information. That is, the website could act as a RE information Hub for interested 	January 2013

		<p>stakeholders.</p> <ul style="list-style-type: none"> • Collect and collate relevant documentation on RE in SADC. Data to be collected: List of Energy Associations, Country Profiles, policies, international best practice on a range of RE topics and also linkages to other regional programmes and initiatives. • Design new sub-sections based on themes and categories to sort information for ease of use and access 	
	SADC	<ul style="list-style-type: none"> • Provide Technical Advisor with relevant information where feasible. • Formally request submissions for website/data repository from national focal points. • Internal communication within SADC could also be improved through regular contact with national focal points such as regular meetings, workshops and telephonic communication where feasible. 	On-going
	Member States (National Focal Points)	<ul style="list-style-type: none"> • To submit all relevant country data such as national policies and strategies, RE roadmaps, resource assessments etc. 	On-going
	MFA	<ul style="list-style-type: none"> • Provide TA with relevant information where feasible. 	On-going
<p>Recruitment for SADC Energy Desk:</p> <p>In the context of the growth of RE sector and interests of ICPs in promoting RE, additional capacity at SADC is required.</p>	SADC, MFA, Technical Advisor	<ul style="list-style-type: none"> • Develop job description for an expert with knowledge of the region and demonstrates policy planning, advocacy and networking capacity. 	March 2013

	SADC	<ul style="list-style-type: none"> • Raise funds from ICPs and/or other sources to pay for the post. Lobbying for such funds from SADC is needed. • Make funds available from internal SADC sources to support resourcing and staffing for the SADC Energy Office going forward. 	January 2012 – May 2013
Re-affirmation of the SADC-MFA Co-operation: To ensure the sustainability of the SADC RE support programme it is important to re-affirm the commitment of both SADC and the MFA in supporting the successful implementation of the RESP going forward.	MFA	<ul style="list-style-type: none"> • MFA to set up meeting with the Executive Secretary of SADC to meet with the new Ambassador for Finland to present actionable items identified and recommended by the MTR and agree on a way forward. 	January 2013
	SADC	<ul style="list-style-type: none"> • Allocate resources for two RE experts at SADC (one technical advisor and one policy planner) to manage and drive the support programme. 	January 2013 – May 2013
	SADC, MFA	<ul style="list-style-type: none"> • Clarify the roles and responsibilities of the technical advisor, MFA and SADC in driving and ensuring the successful implementation of the support programme. 	January 2013

Annex 1: List of Stakeholders Consulted

Name	Title	Organisation
Ms Gertrude Leibrecht	Southern Africa Desk	Austrian Development Agency
Mr Wolfgang Moser	Head of Energy	Ministry for Foreign Affairs of Austria
Mr Ben Davies	Regional Climate Change Advisor	DFID
Mr Cleveland Thomas	Regional Energy Advisor	USAID
Mr Theodorus Kaspers	Counsellor SADC Section	EU
Ms Aurélie Ferry	Investment Officer, Energy & Climate Change	AFD
Mr Clement Lignieres	Project Assistant	AFD
Ms Mari Sofie Furu	Counsellor	Embassy of Norway, Maputo
Mr Jason Schaeffler	Regional Technical Advisor	REEEP
Mr Nathaniel Munetsi	Business Analyst for Southern and Indian Ocean	European Investment Bank
Mr Nokwazi Moyo	National Project Manager, Greening COP 17	UNIDO
Ms Alzouma	Regional Programme Officer for Sub Saharan Africa	IRENA
Mr Mohammed	Energy Specialist	IRENA
Mr Nicolai	Energy Specialist	IRENA
Mr Elijah Sichone	Executive Secretary	RERA
Dr Lawrence Musaba	Coordination Centre Manager	SAPP
Mr Johnson Maviya	Environmental Officer	SAPP
Mr Stephane Barbeau	EEP Consultant	Norplan
Mr Jouni Hamalainen	Technology Manager	VTT
Mr Veli-Pekka Heiskanen	Technical Advisor	VTT
Mr Freddie Motlhathedi	Senior Programme Officer : Energy	SADC Secretariat

Name	Title	Organisation
Mr Johannes Setlhare	Senior Energy Engineer	Energy Affairs Division, Botswana
Mr R. Mungur	Principal Planner	Ministry of Energy and Public Utilities, Mauritius.
Mr Jaime Chambule	Environmental Office	Ministry of Energy, Mozambique
Mr Nico Andy Snyders	Energy Researcher	Ministry of Mines and Energy, Namibia
Mr Khanyiso Zihlangu	Deputy Director: Off-grid based renewable energy	Department of Energy, South Africa
Mr Bongani Thusi	Energy Office	Ministry of Natural Resources and Energy, Swaziland
Mr Malama Chileshe	Energy Officer	Department of Energy, Zambia

Annex 2: Framework Questionnaire

No.	Question
1.	Does your agency have a formal agreement with the SADC Secretariat? Please provide details of co-operation other than the SADC Energy Thematic Group.
2.	What programmes/projects are you currently supporting in the region?
3.	To what extent have you been involved with the SADC RE Support programme? If so, in what capacity?
4.	Are there any overlaps in the MFA's SADC RE support programme and the work your organisation is currently undertaking in SADC? Are there opportunities for collaboration?
5.	Is the RE support programme likely to reach its original objectives?
6.	Has the RE support to SADC brought about positive changes at the SADC Secretariat and its member states? If yes, please provide details of how. If benefits have been more limited, how can the programme be improved going forward?
7.	Are there any key gaps or deficiencies in the SADC RE support programme that need to be addressed? Please provide details. How can these areas be addressed?
8.	What are the key barriers to RE sector development and project implementation in SADC more broadly? How can these challenges be addressed?
9.	What are the key challenges facing the SADC RE support programme itself, and how can these addressed?
10.	Were you consulted in the formulation of RESAP? If so, what communication methods were used?
11.	Who did you interact with during the different stages of the RESAP Consultations? Is your feedback adequately captured/reflected in the strategy?
12.	What are your thoughts on the RESAP? Can the strategy be easily implemented in the region? Have you identified any key gaps with regards to RESAP? Does the strategy adequately address RE challenges in SADC?
13.	Has your department's involvement in the RESAP consultations influenced or impacted on your department's decision-making, when it comes to national RE plans or implementation?
14.	What additional resources does your organisation have to implement the strategy?
15.	Are there key lessons that have been learnt in the SADC RE Support programme to date, which should be highlighted? If so, please provide an overview of these key lessons learnt to date.
16.	Are there any other points you would like to raise, or any questions you would like to ask of the project team?

Annex 3: MTR Approach and Information Collection Methods

I. The Programme Document

For a renewable energy project in particular, the document should describe the following items in a logical sequence, and in this case, preferably by country:

- Electricity demand
- Technology availability
- Financial conditions
- Economic conditions
- Institutional resources
- Infrastructure
- Risk (technical, financial and institutional)
- Sensitivity (define project/option viability and parameters)

II. The RESAP Strategy

The aim of this evaluation is to improve programme implementation during the remaining period and critically assess impact achieved thus far.

a) Evaluation Approach

The evaluation approach is informed by several factors:

- The issues identified in the Terms of Reference (TOR) from the Ministry for Foreign Affairs of Finland as well as the criteria outlined therein (relevance; efficiency; effectiveness; impact; sustainability; Co-ordination, Complementarity and Coherence; as well as the added value provided by the Finnish support;
- The evaluation criteria of the OECD/DAC Evaluation Quality Standards;
- Evaluation criteria specific to renewable energy projects, ranging from due diligence criteria to standardised models emerging out of the development context ;
- USAID/Office of Energy, Environment and Technology: USAID Best Practices Guide, Chapter 4: Economic Appraisal of RE Investments; and,
- Indicators for measuring achievement of the objectives are validated according to generally accepted criteria, such as SMART (Specific, Measurable, Attainable, Realistic and Timely)

b) Evaluation Methodology

- Desk-top review of relevant documents (specifically an evaluation of the log-frame in the programme document and an evaluation of the M&E framework). In this way, the strategic approach (theme of 'Strategy') will be unpacked and the logic of the 'theory of change' embedded in the programme document can be interrogated.
- Interviews with selected members of states representatives and stakeholders, using a mixed methods approach that combines qualitative and quantitative questions.

- The responses from the three different groups of interviewees will then be analysed and compared in a process of triangulation that will counter any subjective influences stemming from the evaluator.
- The basic methodological idea behind this review is to combine the approaches of qualitative and quantitative survey methods. For this, representatives of the various interest groups involved will be asked to make their own personal assessment of the programme. The most important points from the interviewee's perspective are then collated. These statements serve as assessment standards by means of which the interviewee rates defined elements, such as the development measure at different points in time, the presumed performance concepts of the other actors and their inputs, as well as the overall concept of the project/programme and its framework conditions.
- To ensure data quality, at least four interviews with at least three groups of interviewees and eight statements per interview must be collated. Experience has shown that patterns are revealed from a random sample of four interviews per group onwards. Since only the people who are best informed will be interviewed about the project or programme, the sample population is generally small. Substantially increasing the random sample only provides more valuable findings if the additional interviewees also have very good knowledge of the project.
- Questions will be designed to encompass the overall framework conditions as well as the different levels of a project's results chain. A clear distinction will be made between the different result levels, reflecting the intervention logic, namely:
 - Inputs (including the RESAP strategy)
 - Activities (including internal cooperation of partners and the level of collaboration among various stakeholders; cooperation with external stakeholders; management processes; capacity building, learning and innovation and knowledge management)
 - Outputs
 - Results and impacts (there will be less focus on these since the programme has not yet reached implementation phase)

In addition, questions will attempt to capture information that can describe the context of the development intervention:

- The policy context, development agency and partner policies, objectives and strategies
- Development context, including socio-economic, political and cultural factors
- Institutional context and stakeholder involvement

c) Criteria for Review of the RESAP Strategy

- To what extent does it meet the region's needs?
- To what extent is it appropriate?
- Does it take into account capacity in the region?
- Is it realistic and feasible?
- Is the intervention logic (or theory of change) expressed in the programme document likely to translate effectively into the strategy and likely to succeed?

d) Criteria for Review of the M&E Framework

This will involve doing an analysis of each indicator and the provision of comments on its appropriateness. While there is no evidence of a clearly conceived Theory of Change, this assumptions implicit in the framework regarding how change will be effected will be extracted and presented. These two activities will lead to a modification of the M&E Framework / log frame, in light of conclusions on indicator analysis and on the basis of feedback from the stakeholder interviews. The following will be used to interrogate the rigour of the M&E framework:

- Develop a dictionary of definitions encompassing each indicator and assessing how well conceptualised it is and whether it aligns with the final result.
- Assess the indicator metrics and clarity of what should be measured and the criteria in the M&E framework - are the metrics rigorous, clearly defined and measurable?
- Are there sufficient reporting formats and templates?
 - Is there a strategy in place for using this information once it is generated
 - Assess availability of baseline data against which to measure progress
 - Assess attribution – can the indicator capture change that is directly attributable to the intervention?
 - Assess data collection and verification suggestions and progress reports
 - Assess appropriateness of indicators as managerial tools – do they clearly tell the implementers what to do?
 - Present factors that the M&E plan did not take into account (e.g.: lack of M&E capacity; lack of implementation capacity; institutional arrangements of SADC)
 - In order to assess the Theory of Change for the programme, attention will be paid to the implied results chain and the nature of the collaboration involved in developing the M&E framework?
 - For modification of the M&E Framework / log frame, there will be a focus on streamlining the activities (differentiate activities of technical assistant from those of respective governments) and narrowing down and sharpening the objectives: some objectives are very specific while others are vague.

e) Suggested Questions (based on criteria in the TOR)

Relevance:

- Is the programme still consistent with the needs and priorities of SADC, the partner governments, final beneficiaries and other stakeholders? Is there ownership in SADC, the partner governments and beneficiary side?
- Is the programme consistent with the policies of the MFA and does the partnership contribute to the regional integration in Southern Africa?

Efficiency:

- How well have the activities transformed the available resources into intended results, in terms of quantity, quality and time? Can the costs of the programme be justified by the results? Have the contributions by SADC, the partner countries and the MFA been provided as planned? What is the quality of the technical assistance?
- Quality of the overall management arrangements (Steering Committee, SADC Energy Unit, VTT and MFA) and day-to-day management? Are possible problems in implementation adequately communicated and addressed? How effective is the

functioning of the institutional arrangements, including co-operation and communication between stakeholders? Is the utilisation of funds transparent?

- Are the human and financial resources adequate to manage and operate the programme? How good is the quality of monitoring both at programme and individual project level?
1. Does SADC have the administrative capacity to carry out the project?
 2. Is there a demand for the project from all the Member States?
 3. Does the RESAP have information about the market?
 4. Is it possible to get sufficient technical data to define the type of RE technology equipment needed?
 5. Does each member state have the financial capacity or access to sufficient funds to carry out the project?
 6. Can the project be carried out on schedule?
 7. How will this project contribute to the economic growth of the country?
 8. What are the distributional benefits? (Who benefits and by how much, who pays and by how much?)
 9. Are there other social objectives achieved (stabilization of energy supply, diversification of energy supply, environmental conservation, poverty relief, gender parity)?
 10. Does the RESAP incorporate adequate RE and EE technical options?
 11. Have the levelised costs (capital, operating, maintenance, replacement) of the renewable energy options in comparison to conventional energy sources been factored into the RESAP?
 12. Does the RESAP clearly outline what is required to ensure reliable and sustainable operations?
 13. Does the RESAP outline the advantages and disadvantages that renewable energy technologies have relative to fossil fuel-based options?
 14. Does the RESAP indicate where geographically the renewable energy systems make sense – off-grid/ where the grid is present?
 15. Does the RESAP outline the procurement packages for various renewable energy systems?
 16. Have the documents referenced in the programme document been collated and filed at the SADC energy unit?
 17. Do energy ministers appreciate the opportunities in RE and how engaged and responsive are they?
 18. Describe the support of the National Ministries, especially their level of activity towards fulfilling the goals of the RESAP?
 19. Is there sufficient coordination and communication between key SADC divisions working on the same thematic issues (e.g. Forestry, Agriculture and Energy)?
 20. Does SADC have sufficient staffing and streamlined bureaucratic operations for energy sector work?
 21. Does SADC have sufficient influence on Member States to ensure actual implementation?
 22. As a donor, what is the reputation of SADC and what is its relevance as a productive partner to work with in terms of energy, and would you continue to fund it?
 23. What would you consider to be hampering issues within the SADC Secretariat (e.g. understaffing, bureaucracy, limited mandate/influence on Member States)?
 24. Do donors favour certain RE technologies over others?
 25. What is your assessment of the current project concept as outlined in the programme document?
 26. Are donors flexible enough to respond to the requests and inputs of individual Member states?

27. Is the strategic and operational exchange between donors and SADC projects working on natural resource management (i.e. structured exchange in terms of identifying potential areas for cooperation, streamlining projects, impact, etc) smooth and sufficient to inform this programme?
28. Are the decision making structures in individual Member States conducive to operate on local implementation level?
29. Are Member States sufficiently staffed to operate on local implementation level?
30. Do energy ministers have the capacity to act on the recommendations of the RESAP?
31. Are there the resources and capacity (both institutional and human) to co-ordinate and implement a RESAP and champion RE in the region?
32. Is the RESAP focused on a common outcome and aligned to the Member States' policies and focal areas?
33. Is there buy-in from the SADC energy ministers and ownership of the plan?

Effectiveness

- To what extent has the programme achieved its objectives, including a summary and analysis for each indicator?
 - Is the quality and quantity of the produced results and outputs in accordance with the plans, how are the results/outputs applied by the beneficiaries and other intended stakeholders (member countries, other donors/investors)?
 - Are the results/outputs making a contribution towards reducing poverty and inequality and promoting sustainable development?
1. What is the presumed source and cost of the technologies?
 2. At what scale can the roll out of RE technologies be achieved (targets delineated by country)?
 3. What is the source of raw materials for RE production, how adequately are the regional and national statistics mapped, and is there sufficient baseline data? How reliable and accurate is the data available on energy resources in the SADC region, and is it adequate for identifying baselines? (two SADC Energy Yearbooks have been published in 2004/5 and 2007)
 4. What are the primary energy inputs into the process, and what is the energy balance?
 5. Has the process been proven in other regions and in similar multilateral arrangements?
 6. Has the VTT technical team compiled thorough semi-annual and annual progress and financial reports for the Steering Committee meetings?
 7. Is VTT abreast of member state and SADC energy policies?
 8. Has the Energy Thematic Group made constructive inputs?
 9. Did the Steering Committee approve annual work plans and budgets?
 10. Do the annual work plans reflect the Logical Framework of the RESAP?
 11. Has there been sufficient stakeholder engagement in the presentation of the RESAP?

Impact

- Has progress been made towards achieving the overall objectives and long-term targets of the programme?
- What is the overall poverty, inequality and sustainability impact of the programme (intended / unintended; positive / negative etc.)? In terms of impact, is the volume of the interventions right?

1. Have suitable partners been identified for entering into institutional arrangements with for the implementation of the project that could take full ownership and actively run the process (intermediary implementing partners such as private partner organisations and NGOs)?
2. Have the technical reports been placed on the website for easy access?
3. What is the progress towards the establishment of the RE Technical Committee at SADC?
4. Have individuals been identified at Member State level that are suitable for identifying RE projects, incentive schemes for investors, and suitable low-cost demonstration projects?
5. Why are there no timelines reflected in the M&E framework?
6. Is it possible to obtain individual country RE targets instead of using the RSA IRP 2010 targets?
7. There appears to be an emphasis on grid-connected electricity solutions, are you in favour of this as an RE technology option?
8. Have service providers for capacity building in energy management been identified for training Member States?
9. Has the EE policy landscape in SADC been mapped adequately to inform a regulatory framework?
10. Why are biofuels singled out in the M&E framework?
11. What is meant by 'regional manufacturing' of appliances? Is it desirable to manufacture locally or import from SA?
12. What is the institutional capacity of regional universities / academic institutes to compile RE resource maps / R&D in RE and EE?
13. There appears to be little standardisation in the metrics in the M&E Framework as the measurement indicators slide and shift – from 'number of people with access to energy' to 'number of people with access to energy for economic activity' – is this an appropriate way of measuring an increase in access to energy?
14. Should the M&E framework breakdown energy use by sector and on that basis suggest priority projects? (There is concentration on biomass and domestic energy, and then on the SAPP utilities but the logic behind it is not clear).
15. In other indicators it shifts to measurement by TWh, and then to number of technologies – do you think these are a logical and consistent way to measure to expansion of RE technology?

Sustainability

- What are the possible SWOT that enhance or inhibit sustainability?
 - Will the benefits of the programme be maintained after the termination of external support?
 - Who will take over the responsibility of financing the objectives, or have they become self-sustaining?
 - Is there an exit strategy?
1. Is there a distribution and commercialisation component for the RE technologies, and will there be intermediate scale-up steps before full commercialisation?
 2. What are the key assumptions for commercially viable technologies (e.g., size, cost of production, location)?
 3. Do you foresee the development and implementation of a detailed exit strategy?

4. Do you think the activities outlined in the RESAP will be achieved in SADC Member States and will they continue sustainably with Member State funding at the end of the programme?

Co-ordination, complementarity, coherence

- How have other programmes, cooperation and strategies in the area of renewable energy been taken into account in implementation, including experiences of joint work with other actors?
 - What has been the role of the private sector and has its potential been adequately utilised?
1. Does the RESAP adequately capture existing policies and initiatives in the RE sector in Southern Africa?
 2. What prior work is most similar to the RESAP and who are the perceived competitors?
 3. Are there any institutional barriers or conflicts of interest that would inhibit the capacity for the EEP-S&EA to support and complement the RESAP (eg: funding for project development and pilot-stage investments in RE projects)
 4. To what extent is the Southern African Power Pool involved in the RESAP and to what extent are electricity utilities planning and operations covered by the RESAP?
 5. To what extent are SAPP members able and willing to provide operational capacity to the RESAP?
 6. To what extent is RERA involved in the RESAP and to what extent are regulators
 7. To what extent are RERA members able and willing to provide operational capacity to the RESAP?

Value-Added

- What is the added value provided by the Finnish support (e.g.: in terms of addressing democratic governance, human rights, public participation, access to information, gender equality in the process of programme planning and implementation) to be commented on separately?

Annex 4: Renewable Energy Potential in the SADC Region²².

Country	Status of Renewable Energy
Angola	<ul style="list-style-type: none"> • The total installed renewable electricity capacity for the year 2007-2009 has been 0.498GW • Current electricity generation: Thermal (35%); Hydro (65%) • Energy consumption: 8 989 ktoe/year • Energy production :105 837 ktoe/year • RE Potential areas: hydropower, wind solar and Biomass
Botswana	<ul style="list-style-type: none"> • RE policies: Financial Incentives - Capital subsidy, grant, or rebate; Tax Incentives • Energy consumption:1 839 ktoe/year • Energy production: 1 002 ktoe/year • RE targets: 1% target of final energy by technology by 2016; 80% of electricity by technology by 2016 • The share of renewable in the primary energy sector is about 27%. 80% of electricity in imported from South Africa. • Current electricity generation: Solar PV (0.1%); Thermal (20%) • The total installed renewable electricity capacity for the year 2007-2009 has been 0.0GW. • Potential RE areas: wind, solar and biomass. There is therefore a strong need of FIT for wind, solar and biomass. • Planned expansion: RE target of 25% grid connected electricity; Development of feasibility study for 200MW Solar Thermal; Feasibility study on biodiesel production from animal fat.
Lesotho	<ul style="list-style-type: none"> • Energy production by hydropower is 611.0MW • RE targets: 35% target of rural electrification to come from renewable energies by 2020. • The share of renewables to electricity generation is about 99.5% (519.8GW). The share of renewable energy to total primary energy supply is about 89.7% (33.4PJ) • The total installed renewable electricity capacity for the year 2007-2009 has been 0.076GW • Current electricity generation: Hydropower (99%); Diesel and Solar PV 1% • Potential for RE: Solar, Wind, and Hydro. Sparking a need for FIT for wind, solar and biomass.

²² REN21.2012: Renewables 2012 Global Status Report.

Madagascar	<ul style="list-style-type: none"> • The total installed renewable electricity capacity has increased from 0.105GW in 2007 to 0.124GW in 2009. • RE targets: 54% targeted share of renewable to final energy supply by 2020; 75% targeted share of renewables to electricity by technology by 2020. • Current share of RE in electricity is 64% and share renewable to electricity production is 60%. • Total Primary Energy Supply: 274.2 PJ - of which renewables: 248.5 PJ (90.6 %) • Electricity generation: 1,104 GWh - of which renewables: 699.7 GWh (63.4 %); Electricity use per capita: 45 kWh; Electrical capacity: 246 MW - of which renewables: 124 MW (50.4 %) • Current electricity generation: Biomass (90%), hydro (1%), Oil and Oil products (9%), coal (0.1%) • Potential for RE: Wind, solar, hydro, biomass, geothermal, ocean • RE policies: Renewable energy Programme (2008-2014); Madagascar Action Plan (2007-2012).
Malawi	<ul style="list-style-type: none"> • RE policies: Financial Incentives - Tax Incentive; Regulatory Policies –Feed-In Tariff (FIT); Obligation and Mandate • The total installed renewable electricity capacity is about 0.283GW. • Current electricity generation; Hydro (99%); thermal (1%) • RE targets: 7% targeted share of renewable to primary energy and supply by 2020. Planned generation expansion seeks to install various Solar PV • RE shares: There is a 98% share of renewables to the total capacity. 97% Share of biomass to total primary energy supply. 97% electricity production by solid biomass (firewood, charcoal, agricultural and industrial wastes). Sugar cane waste (bagasse) contributes about 10% (5MW) to electricity generation. Hydropower has a 94% share to electricity production. Biofuels contribute 0% to the transport sector. • Potential for RE: available hydro sites with the potential total capacity of 1200MW; Increase electricity generation via biogas in the sugar industry; biomass use in the sugar industry has the potential to produce 100MW; Expansion of solar and wind renewable – need of an appropriate REFIT policy.
Mauritius	<ul style="list-style-type: none"> • RE policies: Financial Incentives - Capital subsidy, grant, or rebate; Regulatory Policies –Feed-In Tariff (FIT) (hydro, solar and wind) • RE target: 35% Targeted share of renewables to primary energy supply by 2025; 65% targeted share of renewables to electricity by 2028. • RE share: 28% share of renewables to primary energy; 37% Share of renewables to electricity production. • The total installed renewable electricity capacity is about 0.219GW. • Total Primary Energy Supply: 59.0 PJ - of which renewables: 11.3 PJ (19.1%). Electricity generation: 2,577 GWh - Of which renewables: 608.9 GWh (23.6%). • Electricity use per capita: 1,870 kWh • Electrical capacity: 739 MW - of which renewables: 59 MW (8%) • Total primary energy supply: Oil and oil products (54%); hydro (0.6%); biomass (16%); coal and coal products (29%) • RE policies: Utility Regulatory Act (2004); Energy policy; Long term Energy Strategy (2009-2025); Energy Strategy (Action Plan) (2009-2025) • RE potential: Wind, solar, hydro and biomass.

Mozambique	<ul style="list-style-type: none"> • Energy consumption: 7 388 ktoe/year • Energy production: 11 460ktoe/year • RE Policies: Regulatory Policies – Obligation and Mandate. Future biofuels (biodiesel mandate or target) for the transport is 5% by 2015. • RE Targets: 6 000MW Achieved with wind, solar and hydro capacity (each 2,000 MW). • RE share: 96.7% (395.5PJ) share of renewables to total primary energy supply.100% Share of renewables (exclusively large hydro) to electricity production and 99% (17TWh) Share of renewables in electricity generation. 89.7% (217.9MW) share of renewables in electrical capacity. • 2.250 GW Total installed renewable electricity capacity in 2007 and decreased to 2.179 in 2009. • Electricity generation: Thermal (1%); Hydro (98%); Wind, Solar, Biomass and Diesel (1%). • RE potential: Wind Technology along the coastline; Solar – across the country; Biomass – in the areas of sugar cane production e.g. Xinavane Manhica; Mfambisse, Marromeu, Buzi and Luabo. FITs needed to subsidise RETs in Mozambique.
Namibia	<ul style="list-style-type: none"> • Energy consumption: 317 ktoe/year • Energy production: 1 548 ktoe/year • RE shares: 20.9% Share of renewables to primary energy supply; 97 % Share of renewables (exclusively large hydro) to electricity production. • Total installed renewable electricity capacity between 2007 and 2009 was 0.249GW • Total Primary Energy Supply: 71.7 PJ - of which renewables: 13.8 PJ (19.2%) • Electricity generation: 1,742 GWh - of which renewables: 1,429 GWh (82%). Electricity use per capita: 1,628 kWh • Electrical capacity*: 264 MW - of which renewables: 249 MW (94.3%) • 40 MW of renewable capacity (excluding hydro) by 2011 • Total primary energy supply: biomass (13%), hydro (8%), oil and oil products (72%), solar (0.002%), coal and coal products (7%).
Seychelles	<ul style="list-style-type: none"> • Total Primary Energy Supply: 10.1 PJ - Of which renewables: 0.0 PJ (0.0 %) • Electricity generation: 275.7 GWh - of which renewables: 0.0 GWh (0 %); Electricity use per capita: 2,660 kWh • Electrical capacity: 95 MW –of which renewables: 0 MW (0 %); RE targets: 5% of electricity generation from renewables by 2020 • 15% of electricity generation from renewables by 2030 • Grid connected rooftop photovoltaic (Systems Project) (2010-2014) • RE Potential: Solar

<p>South Africa</p>	<ul style="list-style-type: none"> • Energy production: 162 951 ktoe/year • Energy consumption: 64 087 ktoe/year • RE policies: Financial incentives - Capital subsidy, grant, or rebate; Public Financing – Public Competitive bidding; Regulatory Policies – FIT (Hydropower, solid biomass, wind, biogas, solar pv, CSP); Obligation and mandate. • RE Targets: 10 000GW Target of renewable final energy consumption 2013; 17.8GW total installed renewable capacity for electricity; 13% targeted share of renewable energy in electricity production by 2020; 4% targeted share of renewable energy in electricity production by 2012; 3 100MW targeted electricity generation from renewable energy (500MW from wind and 50MW of CSP); 4.5% target for share of biofuels in transport; 2% targeted share of renewables in transport. • RE shares: 10.2% (600.8PJ) share of renewable energy in primary energy supply; 11% share of renewables and waste in total primary energy supply; 1.6% share of renewable energy in total primary energy supply; 2.2% share of renewables in electricity production (including hydro) • Total share of renewables in electricity production (including hydro) between 2007 and 2009 has been around 0.875GW. • Electricity generation: 246.8 TWh - Of which renewables: 1,764 GWh (0.7%); Electricity use per capita: 4,532 kWh • Electrical capacity*: 44.1 GW - Of which renewables: 675 MW (1.5%) • Total primary energy supply: Oil and oil products (17%); Natural gas (3%); wind (0.002%); solar (0.04%); hydro (0.1%); Nuclear (2%); coal and coal products (68%); Biomass (10%) • RE Policies: White Paper on Renewable Energy; National Cleaner Production Strategy, renewable energy capital subsidy scheme; biofuels industrial strategy; Renewable energy market transformation programme, REIPPPP, Integrated Resource plan for electricity. • RE Potentials: wind, solar, hydro, biomass and Ocean.
<p>Swaziland</p>	<ul style="list-style-type: none"> • RE shares: 48% share of solid biomass and waste to primary energy supply; 90% share of biomass to total final energy consumption. • Total installed renewable electricity capacity is around 0.042GW • Total Primary Energy Supply*: 94.0 PJ – of which renewables: 57.1 PJ (60.8%)(Biomass-63%; Heat-23%; Coal and coal products-5%; Oil and oil products-9%; Hydro-0.3%) • Electricity generation: 733.4 GWh - of which renewables: 650 GWh (88.6 %). Electricity use per capita: 943 kWh • Electrical capacity: 130 MW - of which renewables: 120 MW (92.3 %) • RE targets: 20% of all public buildings installed with solar water heaters by 2014; Develop Solar water heater standards by 2012; Establish fiscal incentives to promote renewable energy by 2013; Establish a demonstration centre for renewable energy technologies by 2015 • RE policies: Swaziland Utilisation of Renewable (Energy Action Plan); National Energy Policy; National Energy Policy Implementation (strategy)-2009 • RE potential: Wind solar; hydro and biomass. Renewable Energy Association of Swaziland (REASWA), a non-profit organisation, aims to introduce these sources mainly in the rural areas. Over 75% people live in rural areas and use wood fuel as their main source of energy for cooking and heating.

Tanzania	<ul style="list-style-type: none"> • RE potential: Average insolation for Tanzania is 5.5 kWh/m² • Energy production is 16 902 ktoe/year • RE policies: Public Financing-Public investment, loans, or financing; Regulatory Policies-Feed-In Tariff • RE shares: 872.20MW average available electric capacity; 88.90% (730.3 PJ) share of renewables in primary energy supply; 0% share of renewables in heat energy and transport; 579MW (57.6%). Share of renewables in electricity capacity; 0.579MW total installed renewable electricity capacity • Energy production by hydropower – 2 573.591MWh • Current electricity generation: thermal (1%); Hydro (99%) • RE potential: hydropower, geothermal, biomass, co-generation; Mini-Hydro in North Western part of the country; Solar potential: Western and Southern parts of Zambia.
Zambia	<ul style="list-style-type: none"> • Energy consumption: 6 790 ktoe/year • Energy production: 5 676 ktoe/year • RE policies: Financial incentives-tax incentives; Regulatory Policies -Obligation and mandate • RE shares: 89.6% share of renewables to primary energy supply; 99.6% share of renewables in electricity production; • 1.672GW total renewable electricity installed capacity.
Zimbabwe	<ul style="list-style-type: none"> • Energy production: 8 533 ktoe/year • Energy consumption: 8 345 ktoe/year • RE Shares: 69.70% share of renewable energy in primary energy supply • 0.680GW total installed capacity of renewable energy • Current electricity generation: Thermal-1120 MW (Hwange Power Station 920MW, Small Thermals 200MW); Hydro -750MW (Kariba); Bagasse – 62MW • RE potential: solar, hydro, and co-generation. Limited potential for wind, biomass, geothermal. Strong need for FIT to drive RE generation and capacity.
Democratic Republic of Congo	<ul style="list-style-type: none"> • RE Shares: 99.6% share of renewable energy in primary energy supply; 98.70 share of renewable energy in electrical capacity; 99.60% share of renewable energy in electricity generation. • Total installed renewable electricity capacity has been 2.475GW between 2007 and 2009. • Electricity generation: Hydro-electric: 98.7%; Non-renewables (Thermal etc.)-1.3% • Total primary energy supply (2009): 22,921 ktoe; Combustible Renewables and Waste: 93.6%; Hydroelectric: 2.9%; Natural Gas: 0.03%. • RE: Solar -836 solar systems, with a total power of 83 kW; wind energy -total potential for wind energy of 77,380 MW, or 102 TWh; Biomass energy Firewood and charcoal account for the majority of primary energy consumption.

Annex 5: Activities Currently Supported by ICPs in the SADC Region

ICP	Key Programme	Description
UNIDO	Sustainable Energy 4 All (SE4ALL) programme	Partner in the implementation of the SE4ALL programme.
	Industrial Energy Efficiency in South Africa	Involved in conducting energy audits and developing strategies to improve EE amongst industry in South Africa.
	Industrial Upgrading and Modernisation Programme (IUMP)	Programme is aimed at improving the competitiveness of industry within the SADC region.
	Development of a SADC Renewable Energy and Energy Efficiency centre (SADCREEE)	Aimed as a centre to coordinate RE activities in the SADC region.
REEEP	Municipal Energy Efficiency Demand Side Management (EEDSM) Programme	Assisting to build capacities in South African municipalities to support the implementation of EE DSM management at the municipal level.
	Local Energy and Development Centres in Mozambique.	Establish community driven centres to improve access to RE for poor to low income households in central Mozambique.
	Expansion, Replication and Scale Up of PFAN Network & Activities in South Africa, Mozambique and Uganda.	Provides financing coaching and investor matchmaking to guide clean and renewable energy projects to bankability and financial close.
	Supporting the establishment of an Energy Labelling Scheme for Household Appliances in UEMOA Countries	To assist with the establishment of a regional UEMOA EE labelling scheme for household appliances including air conditioners, refrigerators and lighting.
	Local Renewables and Model Communities' Network: South - South Cooperation between India, Indonesia and South Africa.	Programme aims to develop two model local renewables initiatives, one in Ekurhuleni Municipality in South Africa, and the other in Yogyakarta city in Indonesia while providing both with guidance from a city in India. The programme also aims to facilitate the adoption of similar initiatives in other South African and Indonesian cities.
DFID	Partner in EEP Southern and Eastern Africa.	The Energy and Environment Partnership (EEP) seeks to support project development and investment on renewable energy (RE) and energy efficiency (EE) solutions.
EIB	Provided credit lines to support RE development in South Africa.	Provided credit lines to the IDC and Investec to assist in the development of small scale RE power plants (1 – 10 MW).
	Provided finance to RE developers in South Africa's RE procurement process.	Provides commercial investment opportunities to IPPs to support RE generation capacity in South Africa.
	Provided financing to RE projects in the SADC region	Involved in financing a hydro plant in Zambia.
USAID	Hoisted RE capacity building workshops	Held workshops in order to build capacity amongst Energy Planners within SADC Member States. This was coordinated through the Southern African Trade Hub.
	Policy Development Assistance	Provided assistance to RERA member to develop capacity around policy development.

ICP	Key Programme	Description
AFD	Zizabona Transmission Line	Supporting the development of the Zizabona Transmission Line.
	Providing credit facilities to support RE development in South Africa	Currently involved in providing finance facilities through major banks in South Africa to support RE development.
	Providing financing to RE projects in the SADC region.	Funding hydro power programmes in Zambia to connect to SAPP.
IRENA	Renewable Energy Resource Assessments	Currently conducting RE resource assessments in a number of African countries, planning to expand this to others (e.g. Angola, Zambia and Mozambique).
	Developing knowledge networks	Providing training and creating partnerships between five universities in the SADC region in order to build capacity around undertaking resources assessments.
Austrian Development Agency	Partner in the EEP for Southern and Eastern Africa	The Energy and Environment Partnership (EEP) seeks to support project development and investment on renewable energy (RE) and energy efficiency (EE) solutions.
	Southern African Solar Thermal Training and Demonstration Initiative (SOLTRAIN)	This programme aims to training to build capacity in the field of solar thermal technology and solar thermal systems.
The United Nations Sustainable Energy for All (UNSE4ALL)	Energy Access	This initiative aims to convene a broad swathe of actors (i.e. governments, the private sector and civil society), to galvanise action that can deliver real results for people and the planet. SE4ALL is an initiative launched by the United Nations Secretary general and guided by his High Level Group that brings together all key actors to the table to make sure that sustainable energy is a reality for all by 2030. It focuses on improving energy efficiency and renewable energy deployment in the developing world.
GIZ	South Africa-German Energy Programme (SAGEN)	SAGEN aims at improving framework conditions and capacities for enhanced investments in renewable energies and energy efficiency in South Africa. SAGEN strengthens capacities within the Department of Energy (DOE), the National Treasury and the South African National Energy Development Institute (SANEDI). It supports the institutions in designing and implementing policies and programmes to promote increased energy efficiency throughout the economy as well as the deployment of renewable energy. By promoting investments in clean energy through the creation of favourable framework conditions, SAGEN also contributing to the creation of jobs.
	Skills Development for Climate and Business	This initiative supports the establishment of technology centres for technology transfer, innovation and diffusion.

ICP	Key Programme	Description
	EUEI Partnership Dialogue Facility (EUEI PDF)	GIZ is hosting the EUEI PDF Project Management Unit. This is an instrument of the EU Energy Initiative funded by several EU member states and the European Commission. It supports partner countries in improving access to energy services and energy security. It is devoted to facilitating the development and formulation of energy policies for development through dialogue between all relevant stakeholders. It also conducts thematic studies and events on energy sub-sector policies meant for wider dissemination. The EUEI PDF also supports the Africa-EU Energy Partnership as a secretariat, preparing partnership documents and meetings.
infoDev	Climate Technology Programme	infoDev is a multi-donor sponsored programme that explores the link between technology and development. It is housed at the World bank in Washington DC. infoDev's Climate Technology Programme (www.infoDev.org/climate) is conducting country specific projects aimed at accelerating the development, deployment and transfer of locally relevant climate technologies. The programme explores the implementation of Climate Innovation Centres which form part of a holistic approach to innovation assisting to effectively harness economic opportunities in developing countries through technology entrepreneurship and small medium enterprises (SME) development. The programme includes the establishment of a global network of Innovation Centres to facilitate and catalyse cross border, south-south and north-south collaboration.

Annex 6: The 'Diffusion of Innovations' Theory of Change

The Theory of Change in this approach is based on an impact evaluation framework called the Diffusion of Innovations²³ that has been widely used to describe how social change occurs. Diffusion of innovations is based on thousands of studies and has been used extensively in health, social services, education, and, of late, in the energy field.

Five basic elements of the Diffusion of Innovations²⁴ are:

- **The diffusion process** – Audiences become aware of technologies or practice. They collect and sort information that forms a basis for a decision about a technology or practice. They decide whether or not to adopt. They implement the adoption decision. Then they confirm the decision. When audiences adopt they may subsequently replicate the decision in other settings, continue to use the technology or practice into the future, become a champion, and/or institute organisational and structural changes to sustain use of the technology or practice.
- **The socio-cultural environment** – Change takes place in social, political, cultural, and market contexts that can accelerate or impede the advance of technologies or practices. It is important to understand and sometimes to take action to change these environments.
- **Audience characteristics** – Individuals and firms accept innovation at different rates. Individuals and firms are often labelled as “innovators,” “early adopters,” the “early majority,” the “late majority,” and the “laggards”.
- **Product characteristics** – Products that are widely adopted typically have relative advantages over other products. They are compatible with existing social, cultural, and social systems. They have limited complexity. They can be tried. And, the results of their use are easily observed.
- **Communications mechanisms** – Information can be spread by broadcast through various methods such as by “contagion” or one-to-one contact. One-to-one contact through networks is one of the most powerful ways in which information spreads.

To develop good evaluations that will guide programme efforts and clearly demonstrate value to stakeholders, it is important to ask a series of questions. The first question to ask is what are the programme’s desired long term goals and desired impacts. For energy programme managers, the usual answer is to reduce energy use, to produce more energy from renewable sources, and/or to reduce emissions and pollution released to the environment. For individual programmes, the goals may be more specific. For example, the goal might be to reduce energy use in low-income households, in new buildings, or in industrial plants, and/or to design buildings that produce as much energy as they consume.

Once the impacts are clearly defined, the next questions are who is to produce the impacts and how are they to be produced. The ultimate answer is that decision makers in households, industrial plants, commercial buildings, transportation organisations, and public facilities must decide to change existing behaviours and use efficient technologies and practices or to install and use renewable technologies.

²³ E.M. Rogers, 2003.

²⁴ Reed, J.H.; Jordan, G.; Vine, E. (2007) *Impact Evaluation Framework for Technology Deployment Programs - An Approach for Quantifying Retrospective Energy Savings, Clean Energy Advances, and Market Effects*. Lawrence Berkeley National Laboratory

However, the decisions and actions of end-users cannot occur in a vacuum. There are a whole series of necessary and sufficient conditions that enable the actions of end-users. For instance, if the objective is to introduce end-users to a new technology, there must be a viable market in which to deliver the technology. Efficient technologies must be manufactured and distributed. Distributors and retailers must stock them and efficient practices must be available. Professionals such as architects and trades persons must know about them and promote them or decide to use them. There must be people to use, install, and maintain them.

What are the desired market effects and impacts? Who must decide and act: end-users, market actors, policymakers, knowledge workers, or all of the above? Does the programme need to condition the market so that it supports the technology? Is the programme conditioning the market? Does this need to be a part of the evaluation?

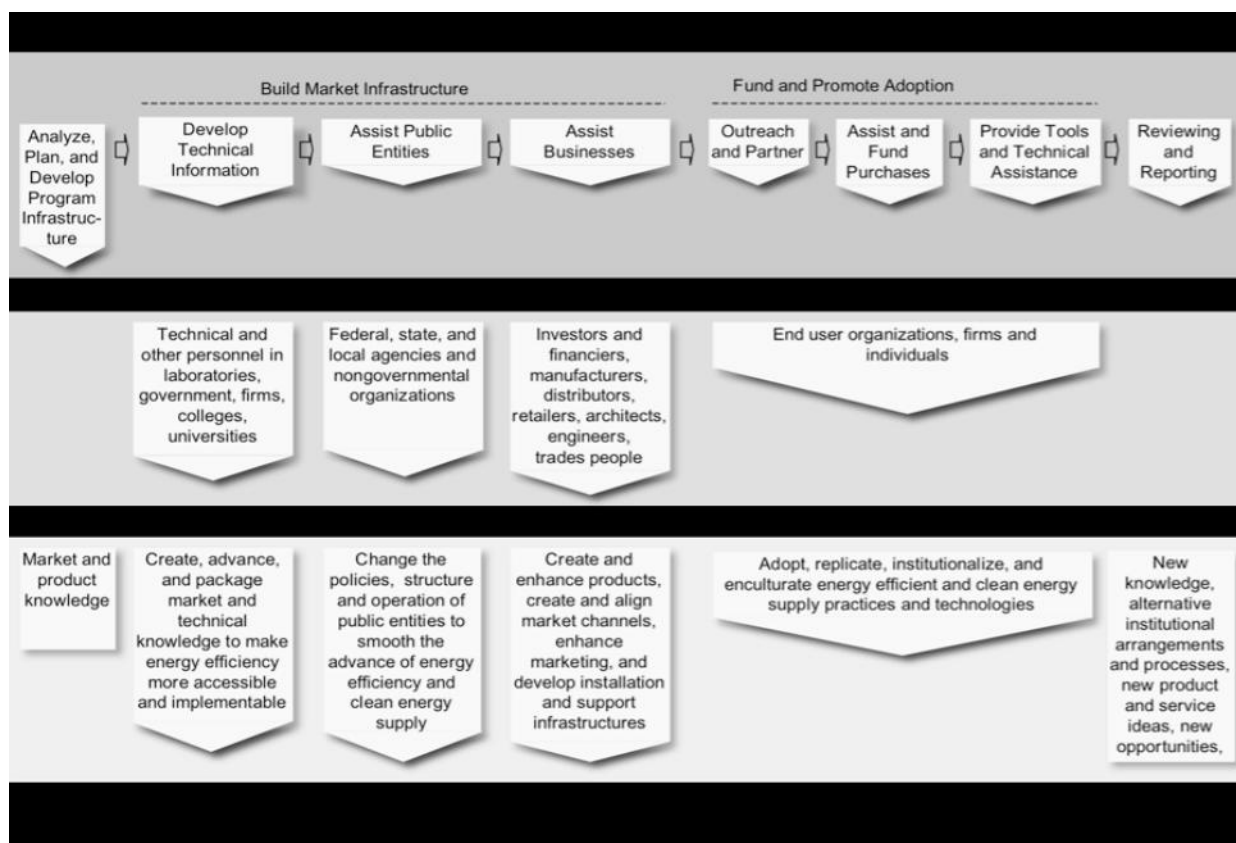
Another set of necessary conditions has to do with public policies and institutions. Are public policies in place that inhibit or promote a technology or policy? Are public institutions in place to promote technologies and practices? For example, does the pricing system prevent the use of certain technologies? Does the lack of sufficient incentives prohibit the uptake of RE technologies?

A last important set of conditions has to do with the infrastructure for knowledge creation and dissemination. Are there relevant organisations or institutions in place to produce knowledge? Is knowledge being created? Is knowledge being packaged in ways that make it usable for others? Has the programme attempted to do this and has it been successful?

The deployment of a technology or a practice is dependent on an interconnected set of activities across the knowledge, public, business, and end-user domains. The programme may only address some domains and other types of organisations, such as nongovernmental organisations, may address others. However, there are likely certain necessary conditions in all domains that need to be addressed for a programme to be successful. Thus, it is important to identify and understand these necessary conditions.

The flow chart below provides a generic high level description of how typical deployment programmes produce impacts. At the top level, programmes analyse and plan; build infrastructure; fund and promote the adoption of new technologies; and review, evaluate, and report. Programmes target knowledge workers, public entities, market players, and end-users, or some combination of these.

In general, deployment programmes have neither the staff nor the resources to continuously stimulate actions in these domains or to touch all possible actors. Thus, it is important to create change among the actors in these domains in such a way that they repeat and sustain their actions in the absence of stimulation from the programme. Programmes cannot reach everyone. Others need to take up the cause. The actors in the domains are not independent of one another. Although not shown in the diagram, there is feedback within and between domains. For example, actors in the business domain may lack information, so actors in the knowledge domain respond to fill this gap. Furthermore, it is important that actors who are not directly involved with programmes observe the actions of those who are, and learn about and emulate their actions. It is through replication, emulation, and internalisation that efficient and clean energy technologies and practices become a part of the relevant culture.



High Level Programme Logic for Technology Diffusion Activities.

The framework, based on the diffusion of innovations is designed to:

- Help programme managers and evaluators apply one of the most comprehensive theories of social change; and
- Provide a technique to create a generic programme logic of the probable actions of partners and target audiences in as many as four domains

This information provides valuable insights into why some programmes and programme elements work and others do not, based on a systematic examination of how social change occurs. The other strength of this theory in relation to the deployment of renewable energy technologies is its use of a Product Characteristics Model. The specific characteristics of a technology or practice generally determine whether and how it is adopted.

Some technologies and practices have characteristics that facilitate their adoption, while others have characteristics that may impede their adoption. The five characteristics of technologies or innovations that determine whether a product will have an easy or difficult time are:

1. Relative advantage
2. Compatibility
3. Complexity
4. Trialability
5. Observability

An innovation is more likely to be adopted if it confers relative advantage over other products or ideas. For example, it is more likely to be adopted if it is less expensive, produces more at lower cost, or has other features such as style, ease of use, or status-conferring properties that make

it attractive vis-à-vis other products or ideas. Although much is made of price, price is only one factor and perhaps not even the most important factor in the decision to adopt technologies or practices.

Annex 7: GVEP's Theory of Change

GVEP's Theory of Change

GVEP sees a pivotal role in the cultivation of sustainable businesses since they are perceived to last longer than the effects of direct donations, and hence it supports as well as direct aid. Hence GVEP's approach is two-fold: the support of poverty alleviation (development of businesses as well as energy access) as well as clean development (predominantly renewable energy).

According to the GVEP, only 40% of the new generation capacity required for universal access by 2030 is by grid extension while the rest is the natural domain of SMEs. According to its Theory of Change, the problem is defined as lack of energy access. The solution lies in energy-oriented SMEs however, such businesses need to flourish to ensure the roll out of renewable energy. That requires certain enabling resources to be in place, however given that in much of the developing world these resources are not fully in place, GVEP's activities are designed to help SMEs overcome these gaps, and so to flourish and expand energy access. Businesses need to have sufficient "enabling resources" in place in order to prosper.

These are: **Technology; Skills; Access to capital; and a Delivery network.** Since there are problems with these in much of the developing world, which GVEP's activities are designed to fix these gaps.

For example, with regard to **technology**: one of the problems often encountered in the developing world is that entrepreneurs undertaking local fabrication do not have access to design and production standards (stoves, biogas, briquettes). GVEP assists by providing technical training and advice to small-scale entrepreneurs, assistance with manufacturing and assistance with product sourcing. Similarly, entrepreneurs distributing imported products do not have access to product quality standards (solar PV) and there is a dearth of project developers with knowledge of applicable technologies (mini-grids). GVEP assists by facilitating access to technical advice for project developers.

Skills: GVEP explicitly acknowledges that when people become entrepreneurs out of necessity, there will often be a lack of requisite business skills or experience. GVEP's role is one of skills development: to ensure that Small scale entrepreneurs get training in business planning, sales & marketing and record keeping. In this way, emerging businesses can develop their business generally; improve prospects of accessing capital; provide project developers and larger SMEs with support in improving/completing their investment case for pitches to potential funders.

Access to capital: the availability of credit for small businesses is severely constrained, and entrepreneurs do not know what is expected of them, while financial institutions (FIs) do not know much about renewable energy. GVEP plays a role in this regard by training local FIs on renewable energy; training entrepreneurs on how to deal with FIs; offering loan guarantees to support credit risk for lenders to entrepreneurs; operate business plan competitions to provide capital to promising enterprises and by launching an impact investment fund focussing on SMEs in sub-Saharan Africa and Latin America.

Lack of an efficient delivery network: roads and communications both between rural populations, and between them and the ultimate sources of raw materials, finished products or expertise, are often difficult. So, entrepreneurs serving these populations have challenges in efficiently managing their supply chain and/or their route to market. GVE assists in this regard by promoting the use of local knowledge of the players in the entire value chain to advise entrepreneurs about

- Alternative suppliers

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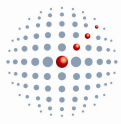
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