**Technical Support for Continued Support on Regional Market Framework Implementation to the Regional Electricity Regulators Association of Southern Africa (RERA)**

Model Wheeling Agreement

**Prepared for:** **Prepared by:**

Office of Energy Programs Deloitte Financial Advisory Services, LLP

Bureau of Energy Resources 1919 N. Lynn Street

U.S. Department of State Arlington, VA 22209

**July 13, 2018**

This work was funded by the U.S. Department of State, Bureau of Energy Resources, Power Sector Program. This work does not necessarily reflect the views of the United States Government.

****

**DISCLAIMER**

This document has been prepared by Deloitte Financial Advisory Services LLP (“Deloitte FAS”) for the U.S. Department of State (“DOS”) under a contract between Deloitte FAS and the DOS.  This document does not necessarily reflect the views of the Department of State or the United States government.  Information provided by the DOS and third parties may have been used in the preparation of this document but was not independently verified by Deloitte FAS.  The document may be provided to third parties for informational purposes only and shall not be relied upon by third parties as a specific professional advice or recommendation. Neither Deloitte FAS nor its affiliates or related entities shall be responsible for any loss whatsoever sustained by any party who relies on any information included in this document.

**TABLE OF CONTENTS**

Executive Summary 5

1. Background on WHEELING AGREEMENT Practices 5

1.1. Existing Practice used by the SAPP 5

1.2. Review of International Leading Practices 6

1.3. Elements for Consideration in a Model Wheeling Agreement 6

2. MODEL WHEELING AGREEMENT 7

3. Next Steps 23

Acronyms

|  |  |
| --- | --- |
| DAM  EDM  EGREG | SAPP electricity market  Electricidade de Moçambique  European Regulators’ Group for Electricity and Gas |
| MIF  NREL | Market and Investment Framework  National Renewable Energy Laboratory |
| RERA | Regional Electricity Regulators Association of Southern Africa |
| SADC | Southern Africa Development Community |
| SAPP  SAPP CC  SAPP ABOM  SAPP IUMOU  SAPP OG | Southern Africa Power Pool  SAPP Coordination Centre  SAPP Agreement Between Operating Members  SAPP Inter Utility Memorandum of Understanding  SAPP Operating Guidelines |

# Executive Summary

Work under *Technical Support for Continued Support on Regional Market Framework Implementation to the Regional Electricity Regulators Association of Southern Africa (RERA)* is funded by the United States Department of State through the Bureau of Energy Resources Power Sector Program. This work will continue support to RERA, as well as three selected pilot countries – Zambia, Namibia, and Botswana – to develop tools and procedures identified by the Market & Investment Framework (M& IF) and the Framework Roadmap. The primary objective is to further progress with specific generation and transmission projects, as identified by the Southern Africa Power Pool (SAPP) and RERA and to increase SAPP membership and participation in the regional electricity market.

The regional transmission capacity needed to facilitate cross-border power trading in the Southern African region is highly constrained, unreliable, and does not offer redundancy. This is mainly due to the lack of investment in new transmission infrastructure and maintenance of existing capacity. Recognizing the importance of a robust transmission system in meeting electricity demand and allowing the market to operate competitively and efficiently, it is important to develop standards and rules that harmonize the effective use of the interconnected SAPP system.

This report provides one component of such harmonized standards, a Model Wheeling Agreement.

# Background on WHEELING AGREEMENT Practices

The simple definition of wheeling is the transport of electricity from one utility to another using the transport network of a third utility. Wheeling allows utilities with excess supply to transmit power to other utilities with excess demand. The ultimate goal is to move least-cost power to where it is needed, maximizing efficiency. When wheeling is an option, a utility can determine if it is cheaper to build a new electric generation facility or buy power from another service area.

Within the SAPP, the term “wheeling” is specifically understood to refer to the transport of power from the crossover point of a utility’s transmission interconnector on a country border, via the same utility’s transmission network, to a crossover point of the same utility’s transmission interconnector at another country border.

A Wheeling Agreement is an Agreement between two or more Transmission Owners, with the SAPP Coordination Center (SAPP CC) as an endorsing party, that sets out the necessary terms and conditions upon which a party can transport power via another party’s transmission system.

## Existing Practice used by the SAPP

One of the founding principles of the SAPP is to share resources and allow Member States to wheel power via each other’s systems with the understanding that wheeling capacity will be available and that wheeling transactions should not jeopardize the safe function of the wheeler’s system or that of the interconnected SAPP system.

Despite this principle, there is no standard Wheeling Agreement currently used in the SAPP. The few Wheeling Agreements that do exist in the region were developed as part of bilateral arrangements, such as the wheeling agreement between Hidro Cahora Bassa (IPP in Mozambique), Eskom (South African utility), and Electricidade de Moçambique (EDM, Mozambican utility). This agreement addresses the wheeling of EDM’s Cahora Bassa power allocation from northern Mozambique to southern Mozambique via South Africa. Such bilateral wheeling agreements often contain such information as the GPS coordinates of the border crossover point, the owner of the interconnector, the details of the wheeler, transmission loss management compensation method (meter to border), scheduling of transactions, and the treatment of transmission losses via the wheeler’s transmission network. They also contain a diagram showing the transaction points and a schedule of how wheeling charges and transmission losses are calculated, charged, and paid.

Considering that the transmission systems of most SAPP Member States are close to if not fully amortized, there has not been a specific need to conclude formal and firm wheeling agreements amongst Members. Instead, SAPP has opted to develop general wheeling rules that are adjusted as the market evolves. A few examples of these rules are the treatment of transaction scheduling, transmission losses, wheeling charges, reconciliation, and settlement of wheeling transactions. This loose arrangement must become more formalized as new transmission infrastructure is developed, especially for infrastructure intended to support wheeling transactions. Without a clearly defined and underlying revenue stream associated with said infrastructure, it will be extremely challenging to obtain financing for these projects.

This Model Wheeling Agreement therefore strives to provide some structure and certainty to SAPP Members and financing entities on how wheeling transactions will be treated and structured, including clear definitions of the responsibilities and obligations of all parties to a Wheeling Agreement.

## Review of International Leading Practices

In Europe it is recognized that the success of a single electricity market depends upon, among other things, the provision and availability of sufficient cross-border transmission infrastructure capacity. Addressing this issue, the European Regulators’ Group for Electricity and Gas (ERGEG) published a Public Consultation Paper in 2006 entitled *Cross Border Framework for Transmission Network Infrastructure.* The paper analyzes key issues surrounding the development and operation of transmission infrastructure, including construction authorizations and permissions, planning and operation standards, regulatory framework, the role of regulators and TSOs, as well as the question of ‘merchant’ interconnectors, and concludes with a set of recommendations regarding best practice for provision of cross-border transmission infrastructure. The National Renewable Energy Laboratory’s (NREL) 2016 report *Wheeling and Banking Strategies for Optimal Renewable Energy Deployment based on International Experiences,* as well as the World Bank’s *Building Regional Power Pools Toolkit,* also provide a range of insights on the wheeling of power and its treatment within an interconnected system. The findings of these reports and other literature reviewed by the Team confirm the critical importance of a harmonized enabling environment for capturing the benefits of cross-border electricity trade, and the components identified inform the content included in the Model Wheeling Agreement provided below.

## Elements for Consideration in a Model Wheeling Agreement

A Wheeling Agreement should provide guidance and minimum requirements for SAPP Member States that want to ensure supply security and certainty while giving due consideration to SAPP rules and regulations. Based on a review of current practices in Southern Africa, international wheeling leading practices, as well as the Team’s practical experience working within the SAPP, Section 2 below provides suggested clauses for inclusion in a Model Wheeling Agreement.

# MODEL WHEELING AGREEMENT

**Section 1 - Applicability**

1. **The Parties**
   1. [Name and registration number of selling utility - Seller] incorporated in [Country];
   2. [Name and registration number of buying utility - Buyer] incorporated in [Country]; and
   3. Name and registration number of wheeling utility - Wheeler] incorporated in [Country].
2. **Context of and roles of the SAPP and RERA**

The Parties shall acknowledge the existence of the Southern African Power Pool (SAPP) and the Regional Electricity Regulators Association (RERA) institutions and the need to use the following documents as minimum requirements in concluding this Agreement:

* 1. SAPP Inter Utility Memorandum of Understanding (SAPP IU MOU);
  2. Agreement Between Operating Members; (SAPP ABOM);
  3. SAPP Operating Guidelines; (SAPP OG);
  4. RERA’S Guidelines for Cross Border Trade; and
  5. RERA’s Market and Investment Framework (MIF).

1. **DEFINITIONS**

An explanation of the key terms used in this Agreement is provided in Annex 1.

1. **SUBJECT MATTER**
   1. This clause deals with the terms upon which a Buyer will secure and use a Wheeler’s system (from the border via the Wheeler’s transmission system to another border) to transport the power that is purchased from a Seller.
2. **TERM OF AGREEMENT**
   1. This Agreement shall commences on \_\_\_\_\_\_\_\_ and end on \_\_\_\_\_\_\_\_\_\_\_\_\_.
   2. In accordance with its terms and subject to paragraph (c) below this Agreement shall end on the date specified above or alternatively
   3. This Agreement shall end:
      1. if all Parties agree; or
      2. by notice given to either Party if an administrator or a liquidator is appointed.
   4. Rights and obligations accrued before the end of this Agreement shall continue despite the end of this Agreement.
3. **SCOPE OF AGREEMENT**
4. Under this Agreement the Parties shall agree to render Wheeling services as follows:
   * 1. The Seller shall make available the scheduled power on the border of his country with that of the Wheeler;
     2. The Wheeler shall transport the scheduled power from its border with the Seller to its border with the Buyer, and
     3. The Buyer shall receive the scheduled power on the border of his country with that of the Wheeler.

*Note: it is possible to have more than one-wheeler, and in such case the scope of this Agreement must be adjusted accordingly*.

1. This Agreement shall not cover the sale and purchase of energy.
2. The Parties shall provide, install and maintain all equipment for the provision of Wheeling services at points of interconnection, safely and in accordance with the energy laws of the relevant country.
3. **GENERAL OBLIGATIONS**
   1. The Parties shall agree to meet other obligations set out in this Agreement and to comply with country-specific, SAPP and RERA rules, guidelines and regulations.
   2. Provision of information

The Parties shall provide any information that is reasonably required for the purposes of establishing this Agreement. The information shall not be misleading or deceiving in relation to any information provided.

* 1. Updating of information

Each Party shall promptly inform each other of any:

* 1. change to its contact details;
  2. change that it may be aware of that materially affects access to equipment involved in providing the wheeling services; and
  3. change in plant or equipment, including metering equipment, or any change to the capacity or operation of connected plant or equipment that may affect the quality, reliability, safety or metering of the supply of energy to the Interconnector, the wheeling path or to the interconnected SAPP system.
  4. Laws and other requirements

Each Party shall comply with:

1. the energy laws of its country related to the service provided to the others under this Agreement; and
2. the SAPP and RERA rules, guidelines and regulations.
   1. Indemnities
3. In the event that any Party also on-sells or on-supplies electricity to any other SAPP Member along the Wheeling Path, the Parties to this Agreement shall be indemnified, and held harmless against, any losses, costs, damages, expenses and liabilities that arise as a result of any claims made against by that SAPP Member.
4. The Parties shall further agree to indemnify each other, SADC, SAPP and RERA and hold each other harmless from and against all liabilities or claims for any loss or damage to us or third parties, any death or injuries to any person, and all liabilities or claims which we may incur to any third Party arising out of:
   * 1. the operation of the interconnectors, other equipment at the interconnection points and along the wheeling path;
     2. representation or promise made by either Party, or on either behalf, to any SAPP Member;
     3. the use of electricity which has passed from each other’s transmission systems to and from the wheeling path;
     4. each Parties employees’, agents’ or contractors’ failure to comply with any of its obligations under this Agreement; or
     5. each Party or its employees’, agents’ or contractors’ negligent or reckless acts or omissions.
5. **WRONGFUL AND ILLEGAL USE OF THE WHEELING PATH**
   1. Illegal use of the Wheeling Path and consequences

All Parties shall take reasonable steps to ensure others do not:

* 1. illegally use the capacity of the Wheeling Path;
  2. interfere or allow interference with any of equipment at all the Parties premise, except as may be permitted by law;
  3. use the capacity of the Wheeling Path in a manner that:
     1. unreasonably interferes with the supply of energy to another customer or SAPP Members;
     2. causes damage or interference to any third Party; or
     3. is not permitted by law, SAPP / RERA rules, guidelines and regulations or this Agreement.
  4. Consequences for wrongful or illegal use of the Wheeling Path

If a Party does not comply with the clause above, the other Parties may, in accordance with any or all of the following actions:

1. estimate the amount of Wheeling Path capacity obtained wrongfully or illegally and take debt recovery action against for that amount;
2. undertake (or agree that the other Parties undertake) any necessary rectification work at own cost; and
3. arrange for the immediate suspension of the Wheeling Path and scheduled wheeling transactions.
4. **Owners Liability**
5. Quality and reliability of electricity supply in the different jurisdictions
6. The quality and reliability of the Interconnectors and Wheeling Path shall be subject to a variety of factors that may be beyond the Parties’ control, including accidents, emergencies, weather conditions, vandalism, system demand, the technical limitations of its transmission system and the acts of other persons, including at the direction of a relevant utility.
7. Subject to the next clause, unless a Party has acted in bad faith or negligently, liability shall exclude any loss or damage the other Party may suffer as a result of the partial or total failure to avail the Interconnector or Wheeling Path capacities.
8. Subject to the next clause, all liabilities related to the loss or damage suffered by any Party that is not a result of the partial or total failure to supply electricity to each other via the Interconnector and/or the Wheeling Path shall be excluded.
9. Limited liability
10. Each Party’s liability shall only extend to physical losses and damage the other Party suffers and for personal injury due to the partial or total failure to supply energy to the Interconnector and/or the Wheeling Path and caused by another’s Party’s negligence or bad faith which includes:
    * 1. problems in the quality of supply of electricity to its premises (such as power surges and drops); and
      2. interruptions to or failures of the supply of electricity to its premises.
11. Each Party’s liability to the other shall be limited to $[\_\_] as indexed annually by the SAPP Coordination Centre.
12. **INTERRUPTION OF WHEELING PATH** 
    1. The Wheeler may interrupt the availability of the Wheeling Path for planned or unplanned maintenance.
    2. Planned Interruptions
13. Planned interruptions may be made for the following reasons;
    * 1. the maintenance, repair or augmentation of a Party’s transmission system including maintenance of the metering equipment; and
      2. the installation of new equipment or the connection of other feeder bays.
14. If scheduled transactions on the Wheeling Path will be affected by a planned interruption, the transmission owner shall provide at least [ ] business days’ notice to the other Party and to the SAPP CC.
    1. Unplanned Interruptions
    2. The Wheeler may interrupt the Wheeling Path in circumstances where there is an immediate threat of injury or material damage to any person, property, including:
       1. unplanned maintenance or repairs;
       2. health or safety reasons;
       3. in an emergency as required by a relevant authority; and
       4. to restore supply to some transmission owner’s other customers.
15. If an unplanned interruption is made, the Wheeler shall use all available means to restore the Wheeling Path as soon as possible.
16. The Wheeler shall make information about the unplanned interruptions (including the nature of any emergency and where possible, an estimate of when the Wheeling Path will be restored) available to the other Parties and the SAPP CC within one hour of the interruption.
17. **CANCELLATION OF WHEELING TRANSACTIONS**
18. The Wheeler may cancel the Wheeling Transactions if:
19. one of the Parties uses the Wheeling Path wrongfully or illegally;
20. one of the other Parties fail to pay any direct charges to the other under this Agreement;
21. in an emergency or for health and safety reasons; or
22. if required to do so at the direction of a relevant authority which may include the SAPP CC or RERA.
23. Notice and warning of cancellation

The Wheeler may cancel the Wheeling Transactions only if:

1. a warning notice has been issued to the other Parties, copying the SAPP CC; and
2. the other Parties fail to rectify the matter that gave rise to the right to cancel the time period set out in the warning notice.
3. Parties rights after cancellation

The cancellation of a Wheeling Path shall not limit or waive any of the Parties rights and obligations under this Agreement arising before cancellation, including any of the Parties’ obligation to pay for services rendered.

1. **REINSTATEMENT OF WHEELING TRANSACTION AFTER CANCELLATION**
2. The Wheeling Transaction may be reinstated if the reason for the cancellation has been resolved to the satisfaction of the Wheeler and with the consent of the SAPP CC.
3. **NOTICES AND INVOICES**
4. Notices and invoices related to this Agreement shall be sent in writing through courier, post, or electronically.
5. A notice or invoice under this Agreement shall be deemed to have been received:
   * 1. on the date it is handed to the other Party or left at the Party’s premises;
     2. [ ] business days after it is posted; or
     3. on the date of transmission if sent electronically.
6. **COMPLAINTS AND DISPUTE RESOLUTION**
7. If a Party to this Agreement wants to lodge a complaint relating to the Wheeling Path, it shall be lodged in accordance with the standard SAPP complaint and dispute resolution process provided for in the SAPP IU MOU.
8. **FORCE MAJEURE**
9. Effect of a force majeure event

If either Party cannot meet its obligation under this Agreement because of an event outside the control of the Parties:

* + 1. the obligations, other that the obligation of payment, shall be suspended to the extent they are affected by the event for so long as the event continues; and

1. the affected Party shall use all available means to give the other prompt notice of that fact including full particulars of the event, an estimate of its likely duration, the extent to which obligations are affected and the steps taken to remove, overcome or minimize those effects.
2. Deemed prompt notice

If the effects of a force majeure event are widespread the Parties shall be considered to have given prompt notice if the necessary information is made available by way of a telephone call within 30 minutes of being advised of the event or otherwise as soon as practicable.

1. Obligation to overcome or minimize effect of force majeure event

The Party that claims a force majeure event shall use its best endeavors to remove, overcome or minimize the effects of that event as soon as practicable possible.

1. **APPLICABLE LAW**
2. This Agreement shall be governed by the law of [Country]. (to be agreed by Parties)
3. **GENERAL**
4. Some obligations placed on the Parties under this Agreement may be carried out by another person/entity. If an obligation is placed on a Party to do something under this Agreement, then:
5. the Party shall be considered to have complied with the obligation if carried out by the person/entity acting on behalf of the Party;
6. if the obligation is not complied with, the Party that subcontracted the obligation shall remain liable for the failure to comply with this Agreement.

**Section 2- Specific Provisions**

1. **TRANSFER LIMIT report**

The SAPP CC shall provide an annual transfer limit report of the Wheeler’s transmission system and the Parties shall ensure that all wheeling transactions are scheduled in accordance with the requirements of this report.

The transfer limit report is a document prepared by the SAPP CC that sets safe transfer limits for all transmission systems and SAPP interconnectors to ensure that Wheeling and other transactions do not negatively impact the integrity of the Interconnected SAPP system or that of other SAPP Members.

* 1. If one of the Parties wishes to change the Transfer Limit the Party shall submit an application to the SAPP CC under the SAPP ABOM to change the limit; and
  2. The Transmission Companies and the SAPP CC shall acknowledge that if the scheduled transactions exceed the Transfer Limit:
     1. this may cause damage equipment along the Wheeling Path, and
     2. this may adversely affect the Wheeler to supply services to other.
  3. The Wheeler shall notify the other Parties if it has reason to believe that one of the other Parties have exceeded the Transfer Limit or if there is a material risk it may do so to ensure necessary steps are taken to ensure the Transfer Limit is not exceeded in the future.
  4. If any Party exceeds the Maximum Transfer Limit on more than one occasion the SAPP CC may consider it reasonably required for the protection and/or the security of supply of the interconnected SAPP system, to require the exceeding Party to install equipment to ensure that the Party does not exceed the Maximum Transfer Limit in the future. The exceeding Party shall comply with any such requirement within the time frame indicated by the SAPP CC and provide to the SAPP CC evidence to confirm compliance.

1. **Metering**
   1. The Parties shall, at all times, ensure that there is metering installed at all Points of Interconnection along the Wheeling Path.
   2. Metering equipment shall be of the telemetering type with adequate communication facilities so as to provide the actual flows of active and reactive power at the Points of Interconnection and facilitate reconciliation.
   3. Where the communication facilities are temporarily not available the differences between locally metered figures and those quantities used in daily energy accounting shall be reconciled at agreed monthly or any agreed time periods.
   4. Metering equipment shall be tested by the owner as recommended by the SAPP Operating Sub-Committee. In addition, special tests shall be made on request by any other Operating Member. If the meter complies with specifications, then the Operating Member who has requested the tests, shall bear the costs related to testing. Otherwise, the costs of such tests shall be borne by the owner of the meter. Representatives of any Operating Member shall be given the opportunity to witness the tests.
2. **Protection schemes**
   1. As prescribed in the SAPP Operating Guidelines, the Transmission Companies shall co-ordinate the application and maintenance of protective relays. They shall develop and implement criteria which will enhance system reliability with minimum adverse effects on the Interconnector and that of the interconnected SAPP system.
   2. Appropriate technical information concerning protective relays shall be available in the Control Centers of the Transmission Companies.
   3. System Controllers shall be familiar with the purpose, operation and limitations of protection schemes.
   4. If equipment or protection relay fails and reduces system reliability, the appropriate personnel shall be notified and corrective action shall be carried out as soon as possible.
   5. All new protective schemes and all modifications to existing protective schemes shall be coordinated between the Transmission Companies and the SAPP CC.
   6. The Transmission Companies shall inform each other’s and the SAPP CC of changes in generating sources, transmission, load or operating conditions which could require changes to the Interconnector protection schemes.
3. **Interruptions and Curtailments**
   1. Transaction scheduled on Wheeling Path shall be fully delivered at all times as scheduled except where interruptions or curtailments are caused by Force Majeure Events, by the operation of protection schemes or by the installation, maintenance, repair and replacement of facilities where such events were unforeseeable and therefore notice could not be given.
   2. No Party can guarantee that it will be able to continuously deliver electricity to the Points of Interconnection along the Wheeling Path. Without limiting the foregoing, the events which may lead to an interruption or curtailment in the supply of electricity may also interrupt or curtail, or lead to an interruption or curtailment in, its ability to deliver electricity into the interconnected SAPP system.
   3. Where there is an interruption or curtailment (for any reason) in the availability of the Wheeling Path, then the Wheeler shall:
4. comply with such directions issued to each other or the SAPP CC as are given for the purpose of ensuring that interruption or curtailment is carried out safely; and
5. ensure the protection and safe operation, cancellation and rescheduling of the wheeling transactions.
6. **Limitation**
7. Acknowledgement

The Parties shall acknowledge and agree that the scheduling of the Wheeling Transaction is subject to fluctuations and interruptions from time to time which may affect each other’s ability to sell, buy or transport electricity for a variety of reasons and, therefore, the Parties acknowledge and agree that:

* 1. they are unable to, and do not, represent, warrant or guarantee to other SAPP Members, the SAPP CC and RERA that it will be able to sell, buy or transport electricity on/to/or from the Wheeling path system at any time; and
  2. such fluctuations or interruptions may damage to the Parties equipment or cause it to malfunction.

1. Release

The Parties, the SAPP CC and RERA shall release and discharge each other from and against any loss, cost, damage, expense or Liability that may incur which arises out of, or in relation to any:

* + 1. inability to sell, buy or transport electricity export electricity into its transmission system at any time; and

1. any malfunction of, or any damage to equipment that arises out of, or in relation to, any fluctuations or interruptions from time to time on the Wheeling Path except to the extent that any such malfunction or damage is as a result of fluctuations or interruptions caused by negligence or bad faith in which case it is agreed that liability is limited to direct costs of repairing such malfunction of, or damage to, the equipment.
2. **Safety and technical requirements**
   1. The Parties shall ensure that the Wheeling Path complies with the:
      1. National Grid Code in each country;
      2. Regional Grid Code;
      3. National and Regional System Operating Guidelines;
      4. Any specific rules of the Joint Operating and Maintenance Committee that oversees the operation of the Interconnector (Joint Operating Protocol)
      5. SAPP IUMOU;
      6. SAPP ABOM;
      7. SAPP OG;
      8. Engineering Report; and
      9. Good engineering industry practice.
   2. The Parties shall inform each other, the SAPP CC and RERA as soon as practicable if it fails to comply with the above mentioned requirements.
   3. Where a Party fails to comply with any requirement then the other, SAPP CC or RERA may direct the non-complying Party to make such changes required to the Interconnector as required to address the failure.
   4. The Parties shall comply with any reasonable requirement in relation to the installation of additional equipment on or in connection with the Wheeling Path that may be deemed necessary by the SAPP CC or RERA to ensure the safe and reliable operation of the interconnected SAPP system.
3. **Non-compliance, notification and consequences**
   1. The Parties may notify each other if one Party does not or may not comply with the requirements of this Agreement or if one Party has otherwise breached this Agreement.
   2. If a notice is served, the receiving Party shall undertake such testing, inspection and monitoring as required to determine whether it is complying with the requirements of this Agreement and, where it does not comply, shall undertake such remedial action as necessary to ensure it complies with the requirements of this Agreement. This includes, without limitation, undertaking such testing, inspection, monitoring and other remedial action as reasonably required.
4. **Operation, Work and Approvals**
   1. The Parties shall ensure that the Wheeling Path is operated and maintained in a manner that does not compromise the safe operation of the interconnected SAPP system, does not cause damage to the interconnected SAPP system and does not interfere with the continuity or quality of supply provided by the interconnected SAPP system.
   2. The Parties shall:
      1. provide each other a copy of all government (regulator and relevant energy department), SAPP and RERA approvals relating to the Wheeling Path;
      2. notify each other as soon as practicable if there is a change to, including without limitation a revocation of, any such approval and provide to each other a copy of the revised approval or document effecting the revocation; and
      3. notify each other if there is any reason to believe that an approval may be revoked and the revocation would have the effect that it would cease to be lawful for a Party to own and/or operate the Interconnector.
   3. The Parties shall ensure they can be contacted at all times (24 hours a day, 7 days a week) and have authorized, English speaking and duly qualified personnel who are able to attend to emergencies and other urgent situations in respect to the Interconnector and ensure up to date phone numbers and email addresses are available for such personnel.
5. **Fault reporting**
   1. The Parties shall notify each other and the SAPP CC as soon as reasonably practicable if they become aware of any fault or irregularity of the Wheeling Path.
   2. Where a Party notifies the other and the SAPP CC of a fault or irregularity or somebody otherwise become aware of a fault or irregularity, then the SAPP CC shall undertake such investigation of the fault or irregularity as it considers appropriate having regard to good electricity industry practice, applicable laws and the SAPP Operating Guidelines.
   3. Where the fault or irregularity was caused by a Party’s failure to comply with this Agreement, then the Party shall:
      1. take such steps in relation to the Wheeling Path as required to remedy the fault or irregularity and provide such evidence as required to substantiate that such steps have been successfully taken; and
6. pay the cost for investigating the fault or irregularity, for any action taken in respect to the Interconnected SAPP system due to the fault or irregularity and for any review the SAPP CC or the other Party undertakes to remedy the fault or irregularity.
7. **Record keeping**

The Parties shall:

* 1. keep adequate records in accordance with good electricity industry practice of all inspections, testing and maintenance undertaken with regard to the Wheeling Path and provide these to each other and the SAPP CC for inspection upon request.
  2. carry out such inspection and testing of the Wheeling Path (including its protection systems) as is reasonably require (whether because of a fault or incident which has arisen or otherwise).
  3. from time to time when requested, provide to each other and the SAPP CC such information requested to enable the other to exercise its rights or discharge its obligations under this Agreement or under applicable law or as required by the SAPP CC for the general management of the SAPP interconnected system. Such information must be provided in the form and within a reasonable timeframe after being requested.

1. **Charges**
   1. Subject to sub clause d, the Parties shall pay the charges specified in Annex 2, any other charges, fees or amounts referred to in this Agreement and any other charge or fees they are permitted to charge each other by law or as per a SAPP obligation.
   2. If one of the Parties does not have its own control area it shall procure this service from a SAPP authorized control area and pay the associate Control Area Service Charge.
   3. In addition to the above all the SAPP Members or users shall pay a SAPP system wide users fee to the SAPP CC.
   4. All SAPP related charges will be as detailed in the SAPP Agreement Between Operating Members or as negotiated bilaterally.
2. **Invoicing**
   1. Except where the SAPP CC agrees to invoice and collect the SAPP related charges, the Parties shall be entitled to levy charges under this Agreement and to issue invoices directly to each other for amounts payable under this Agreement. Invoices must be paid within [\_\_] days of receipt.
   2. Where an invoice is not paid within the time required, interest shall be paid on the overdue amount until such time as the overdue amount and any accrued interest is paid.
   3. Any unpaid amount shall bear interest from the date due until the date of payment.
   4. The interest shall be calculated at five percent per annum.
   5. All invoices under this Agreement shall be in US Dollars or [\_\_\_], unless otherwise agreed.
3. **Insurance**
   1. During the term of this Agreement, the Parties shall maintain insurance policies as specified below:
      1. public liability for not less than $ [\_\_\_\_] per occurrence; and
      2. property insurance for any physical damage to the Interconnector and associated electrical equipment for not less than the replacement value of that infrastructure.
   2. The Parties shall provide each other and the SAPP CC with certificates for the insurance policies within 5 business days of the Commencement Date and within 5 business days of any renewal of those policies.
   3. The insurance policies shall:
      1. be taken out with reputable insurers; and
      2. contain such terms and cover such risks as would be required by a prudent operator, with a business similar to that of the Parties, from its insurers.
   4. The Parties shall notify each other and the SAPP CC, as soon as practical, of any material variation or cancellation of an insurance policy required to maintain under this Agreement.
   5. No insurance policy maintained by either Party shall limit the Parties obligations under this Agreement.
4. **Change in law**
   1. If, due to a change in law;
      1. this Agreement ceases to comply with the requirements of the law; or
      2. this Agreement ceases to be compatible with the current SADC regulatory regime for electricity such that it is not possible or practicable for the parties to perform their obligations or exercise their rights in the manner envisaged as at the time of execution of this Agreement;

either Party may propose amendments to this Agreement to ensure this Agreement complies with applicable laws and is compatible with the regulatory environment.

1. **Confidentiality**
2. Confidential Information

Each Party shall treat and keep confidential:

* + 1. the terms of this Agreement; and
    2. all information disclosed to that Party, under this Agreement, pursuant to the transactions contemplated by this Agreement or during the negotiations preceding the execution of this Agreement by the other Party.

1. Permitted Disclosure

Despite clause 15a, Confidential Information may be disclosed by a Party receiving that information in the following circumstances:

* + 1. when required by law or by the requirements, rules or guidelines of a Party’s national regulator, its shareholder, RERA or the SAPP CC;
    2. to any of a Party’s insurers or advisers thereto;
    3. as necessary to enable a Party to discharge its obligations, or exercise its rights, under this Agreement; or
    4. as necessary to enable a Party to claim force majeure under another Agreement or to enable a Party to deal with any claim that it is in breach of another Agreement.

A Party disclosing Confidential Information under this clause shall use all available means to ensure that the persons to whom it discloses that information undertake to keep the information confidential, minimize disclosure and use of the information, and use the Confidential Information only for the purpose for which it was disclosed to them.

1. **Credit Support**
   1. Credit Support at Commencement
      1. Unless a Party has an Acceptable Credit Rating, or its obligations under this Agreement are guaranteed on terms acceptable to the other Party by an entity with an Acceptable Credit Rating, the Party shall provide the other Party Credit Support.
      2. An Acceptable Credit Rating means a credit rating of not less than a Standard and Poor’s rating of [\_\_\_\_] (or its equivalent from another recognized credit rating agency).
   2. The Credit Support shall be:
      1. A bank guarantee, in a form reasonably satisfactory to the other Party, from an African based financial institution with an Acceptable Credit Rating and otherwise satisfactory to the other Party acting reasonably;
      2. a deposit placed with the other Party’s; or
      3. such other form of credit support as proposed by a Party and accepted by another Party at its absolute discretion.
   3. Amount of Credit Support
2. The amount is based on a number of months of charges and shall be equal to a reasonable estimate of the quantum of the number of months of the charges, as estimated and agreed by the parties every two years.
   1. Recourse to Credit Support

A Party may have recourse to the Credit Support to recover:

* + 1. any amounts due under this Agreement but unpaid; and

1. any costs or expenses incurred and losses and damages suffered by a Party or which the other Party is liable under or in connection with this Agreement.
   1. Replacement of Credit Support

If a Party draws upon Credit Support then the other Party shall, within 5 business days of the Credit Support being drawn upon, provide replacement Credit Support.

1. **CANCELLATION**

Subject to and to the extent permitted by applicable law and SAPP rules, the parties may immediately proceed to cancel the Wheeling Transaction:

a. where a Party fails to comply with this Agreement and such failure threatens the integrity or reliability of the Wheeling Path, or that of the interconnected SAPP system;

b. if Credit Support required by this Agreement is not in force and if either Party fails to correct that breach within 10 business days of notice;

c. where any Party commits any other breach of this Agreement and fails to remedy that breach within 30 days of notice;

d. where a Party commits any intentional unlawful act in respect to the Wheeling Path or the interconnected SAPP system;

e. where required due to health and safety reasons;

f. to manage or address an emergency; or

g. where required by a direction of a government agency, SAPP or RERA.

1. **RESCHEDULING**
2. Where the reason for the cancellation was a Party’s failure to comply with this Agreement, failure to comply with an applicable law, a SAPP rule or another wrongful act or omission, the transaction can be rescheduled if within 1 day the matter which led to the cancellation is remedied.

**Section 3 – Interconnector and National Grid Code requirements**

**Section 3A – Interconnector Standards**

The Transmission Companies shall adhere to the “Grid Code for the Interconnectors” that is being developed and adopted by RERA for the Interconnector.

**Section 3B – Access National Standards**

[This section will be completed on a case by case basis depending on the specific circumstances and National Grid Codes of the interconnecting Transmission Companies and with specific relationship to the SAPP and RERA rules, guidelines and Agreements]

**Section 3C – Quality of Supply**

[This section will be completed on a case by case basis depending on the specific circumstances and National Grid Codes of the interconnecting Transmission Companies and with specific relationship to the SAPP and RERA rules, guidelines and Agreements]

**Section 3D – Recovery of Capital**

[This section will be completed on a case by case basis depending on the specific circumstances and National Grid Codes and Pricing policies of the interconnecting Transmission Companies and with due consideration of the SAPP and RERA rules, guidelines and Agreements]

**Section 3E – Adjustment for Losses**

[This section will be completed on a case by case basis depending on the specific circumstances and National Grid Codes of the interconnecting Transmission Companies and with specific relationship to the SAPP and RERA rules, guidelines and Agreements]

**Section 3F – Maximum Export, Import and Transfer Limits**

[This section will be completed on a case by case basis depending on the specific circumstances and National Grid Codes of the interconnecting Transmission Companies and as determined by the Planning Sub Committee of the SAPP giving due consideration to the SAPP and RERA rules, guidelines and Agreements]

**Section 4 - SAPP and RERA requirements**

As the responsible entities for regional harmonization, SAPP and RERA may include here additional specific requirements that need to be reflected in this Agreement. These may include the notification of planned outages, change in system configurations, dispute resolution or any other matter that may have an impact on other utilities or the integrated SAPP transmission system.

**Annex 1 – Definitions**

**Wheeling** - The transmission of a contractually agreed amount of power over a specified time period through the system of a Transmission Owner who is neither the Seller nor the Buyer of the power.

**Wheeling Path** – The path on the Wheeler’s transmission system through which the contracted power will be transported.

**Transmission Owner** – Is the owner of the of the transmission system the Load or Generator is connecting to. This may be the national utility or a private transmission company in a SAPP Member State.

**Point of Connection** – Is the point where the Load or Generator is electrically and physically connected to the Transmission Owner’s electricity network.

**Interconnector** – Is the asset used to interconnect two Transmission Owner’s electrical systems, normally across the border of two countries.

**Annex 2 - Transmission Charges**

**Wheeling Charge**. A charge calculated by the SAPP CC and applied to all SAPP Members and market participants to use the transmission system of a third party for the wheeling of power from a seller to a buyer

**Transmission Loss Charge**. A charge to each market participant of the transmission system for the cost of energy lost in the transmission of electricity from a generation resource to load.

**Control Area Service Charge**. A charges paid to the power system operator who is managing a shared generation control scheme and maintaining balance between capacity and energy purchased and load within the system and maintaining frequency and interchange with other control areas.

**Ancillary Services Charge**. A charge for those services that are necessary to support the transmission of capacity and energy while maintaining reliable operation of the transmission System.

**Transmission Congestion Price**: A charge attributable to the increased cost of energy delivered at a given load bus when the transmission system serving that load bus is operating under constrained conditions. For real time transactions, it is equal to the congestion component of the locational marginal price. Transmission congestion costs may be positive or negative depending on output from generators and consumption by loads

# Next Steps

This Model Wheeling Agreement will provide all Transmission Owners that intend to wheel power within the SAPP system with a comprehensive picture of the rules and regulations put in place by the SAPP and RERA. It also provides a baseline of critical clauses, rights, and obligations that should reduce the time required for parties to conclude the agreement.

Following the Department of State’s review, the Team will share the Model Wheeling Agreement with RERA, who should then consult with the SAPP and the three pilot countries to test the application of the clauses of the Agreement on the ZIZABONA interconnection project. Once approved by RERA, the Model Agreement may be presented to the SADC Directorate of Infrastructure and Services, who after further review and consideration, can table the Agreement to the SADC Energy Ministers for adoption and use across the Southern African region.

.