

Africa GreenCo – An Overview

Synopsis

Africa GreenCo (“AGC”) proposes to interpose a single creditworthy counterparty between buyers and sellers on multiple independent power projects (“IPPs”) in sub-Saharan Africa (“SSA”). An intermediary aggregator between buyers and sellers can help attract sustainable investments in the power sector on the strength of a multi-buyer model.

Compared to current market practice, AGC’s intervention will:

- ⊕ reduce risk and project development costs for all stakeholders;
- ⊕ address inefficiencies caused by the current ‘single buyer single seller’ model;
- ⊕ reduce fiscal burden for host Governments; and
- ⊕ catalyse private sector debt and equity investment.

AGC responds to Sustainable Development Goal 7 which aims to close the energy access gap and “ensure access to affordable, reliable, sustainable and modern energy for all” through a combination of national action and international cooperation. AGC can act as an implementation tool for key regional initiatives, such as the African Development Bank’s New Deal on Energy for Africa and the Africa Renewable Energy Initiative.

In the long term, as AGC succeeds in attracting more private sector investment to the sector, at lower cost, and assists in the transition to cost-reflective tariffs and ultimately utility creditworthiness, AGC will make itself redundant in its role as a creditworthy intermediary. As this occurs, AGC will transition to being one of many traders on the Africa power markets it helps to develop. In the Southern African context the proposed AGC market intervention therefore fits neatly alongside the IPP framework being developed and implemented by RERA, the Regional Energy Regulators Association of Southern Africa, which aims to put in place the regulatory environment needed for an open and active regional power trading market.

Market Context

Bilateral IPPs	With the exception of a handful of cross-border projects, IPPs within SSA are currently structured on a bilateral basis; i.e., with a single buyer and seller.
Rehabilitation of utilities	African utilities are often poorly funded – running an operating loss due to non-cost reflective tariffs, high overheads and substantial investment needs. In most cases they are entirely state owned and dependent on budget transfers – all of which combine to mean a low credit profile. Critical steps to rehabilitate utilities are underway but sustainable and material improvements can only occur in the medium to long term.
Lengthy and expensive transaction execution	With notable exceptions such as South African REIPPP, GET FIT Uganda and Scaling Solar Zambia, IPPs are largely negotiated on an ad hoc project-by-project basis. Negotiations of project documents on individual IPPs are usually very lengthy and often last several years at least. Significant fully ‘at risk’ development costs incurred during those negotiations add materially to total project costs and require a high return to reflect the associated risk profile.
Limited availability, sustainability and effectiveness of third party risk mitigation instruments	Risk mitigants such as liquidity support instruments, early termination buyout regimes and partial risk guarantees are complicated and expensive to negotiate on a project-by-project basis. Even still, they do not fully mitigate the perceived risk of investing in immovable assets in order to sell a commodity (electricity) on a long term basis to a single, often un-creditworthy, buyer. They are also heavily dependent on concessional capital and DFI support.
Host Government fiscal burden	Host Governments are expected to take on contingent liabilities in the form of ‘put and call option’ arrangements on early termination, or more explicit sovereign guarantees. Given the current fiscal position and the medium term macro-economic environment facing most host Governments, this is unsustainable.

Strategy

AGC addresses head on the core issues of (a) offtaker creditworthiness, and (b) the inefficiencies of exclusive bilateral sale and purchase between a single generation company and a single offtaker.

¹The AGC concept was included in the recommendations section of the SE4All Finance Committee Report which was presented to Africa’s Heads of State in Addis Ababa on 13th July 2015 at the Financing for Development Conference.

AGC will play two complementary and synergistic roles in the African power markets:



The first conceptual step is to interpose AGC between the buyer and the seller under an existing bilateral IPP structure; then repeat this on multiple IPPs so that:

- ④ AGC is the buyer for multiple generation companies; and
- ④ AGC is the seller for multiple offtakers.

From this position, AGC will be able to:

- ④ catalyse third party private capital flows to IPPs by improving the risk profile of projects in the region;
- ④ lower the electricity tariff required by IPPs for a project to be financially viable by reducing debt costs and investor return requirements to reflect a lower risk profile;
- ④ provide a route to market for any excess contracted power, thereby mitigating an offtaker's obligation to pay capacity or 'deemed energy' charges for power they do not require; and
- ④ divert power from a defaulting IPP offtaker to other willing buyers, thereby reducing the likelihood of early termination of an IPP's power purchase agreement and the resulting crystallisation of host Government contingent liabilities.

More broadly, AGC will:

- ④ be fundamentally better equipped than a single generation company to mitigate the effect of an un-creditworthy and/or defaulting offtaker;
- ④ also act as a power trader, thereby increasing liquidity and scale of regional power trade;
- ④ assist in the development of power pools;
- ④ support and promote regional standardisation of IPP project documentation; and
- ④ assist in the development of fair and standardised electricity markets in the countries in which AGC operates.

AGC will act as intermediary offtaker only and would not manage the physical transmission and distribution of energy. It will not own any of the grid infrastructure or seek to replace existing utilities. Rather than replacing existing structures, it complements them, and can further act as a bridge to any future energy regional market liberalization and energy trade integration.

AGC aims to learn from, and where possible replicate, the dynamics of more advanced power markets, in particular building on the experience of the Power Trading Corporation of India (PTC India). PTC India was also set up in order to act as a credit risk mitigating intermediary offtaker for privately-financed regional power generators. In the process, it catalysed the entire Indian regional power sector trading market.

AGC design principles

The AGC concept has been developed to fulfil the following key design principles:

- ④ Legally and financially creditworthy
- ④ African-owned and African-led
- ④ Financially sustainable
- ④ Scalable
- ④ Facilitating cross-border trade and investment
- ④ Complementing and collaborating with existing initiatives
- ④ Benefiting IPP investors, utilities and sovereigns
- ④ Catalysing private sector capital
- ④ Incorporating blended capital from concessional and commercial sources

AGC as an intermediary offtaker and aggregator

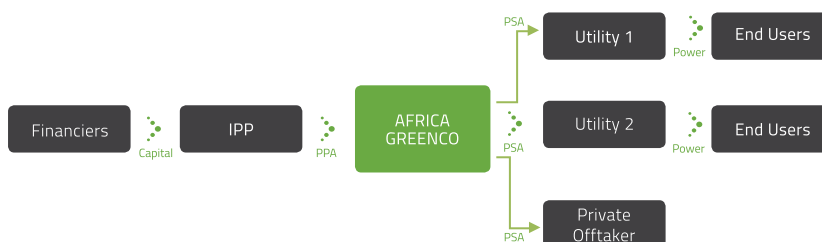
The following is a simple single utility offtaker example:



AGC will purchase capacity and energy from the IPP under a power purchase agreement ("PPA"), and sell that capacity and energy to the utility under a power supply agreement ("PSA"). The PPA and PSA will be on largely back-to-back terms; *save that*:

- ⌚ AGC will take credit risk on the offtakers, such that upon offtaker default under the PSA, AGC will have the contractual, regulatory and operational ability to keep the PPA ‘alive’ by securing alternative buyers whether on a bilateral basis or through short term trading, and will use all reasonable efforts to do so;
- ⌚ AGC will earn a small margin between the tariff paid under the PPA and the tariff received under the PSA.

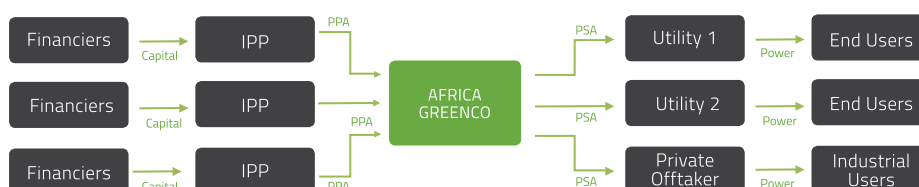
The following is an example of a more complex multi-buyer project, which may be suitable for larger IPPs and/or cross-border projects.



In the above scenario, the intervention of AGC will allow:

- ⌚ individual offtakers to commit to purchase only a portion of the IPP’s total capacity; and
- ⌚ AGC to better manage the complex risks arising under, and documentation required for, multi-offtaker structures.

This structure will be repeated on multiple projects, building a portfolio of IPPs on one side and a portfolio of Offtakers on the other. The portfolio effect will diversify AGC’s risk and enable it to source alternative power or offtakers (as the case may be) in case of default under either a PPA or a PSA.



AGC as a Power Trader

In addition to its role as an offtaker, Africa GreenCo will also participate in the competitive power markets, promoting cross border power transactions and a more dynamic and liquid short term power market.



Impact of AGC on Project Companies

AGC provides the project company with a counterparty which (a) is creditworthy, (b) can mitigate risk via diverting power to third party customers, and (c) can diversify risk over multiple projects.

The intervention of AGC is expected to:

- ⌚ reduce both total project costs and the cost of capital by:
 - reducing the cost of getting projects to financial close;
 - improving projects’ credit risk profile and in turn:
 - reducing equity investors’ hurdle IRRs;
 - reducing the interest rates and other covenants such as debt service cover ratios on project debt; and
 - increasing the tenors of project debt;
- ⌚ make investing in, and lending to, African IPPs (whether at the outset or upon a refinancing) attractive to a wider pool of capital than is currently engaged in the market, in particular to private sources of capital, thereby increasing the available pool of capital; and
- ⌚ allow for more efficient and effective credit enhancement, by building a portfolio of contract exposures which can be de-risked and/or re-insured on a pooled basis.

Impact of AGC on Offtakers and Host Governments

AGC will:

- ⊗ reduce the financial expense and utilisation of human resources incurred by the host Governments and offtakers in negotiating and executing IPP transactions;
- ⊗ increase the installed capacity in the power system, facilitating more reliable power supply to end users;
- ⊗ reduce PPA tariffs (on new IPPs) due to lower IPP development costs and cost of capital;
- ⊗ lower the average cost of delivered power by utilizing otherwise idle generation capacity for generation and sales to third parties, and offsetting the revenue received from third party customers (less a small margin) against deemed energy charges otherwise payable by the Offtaker;
- ⊗ help substitute short term emergency power with cross border traded power;
- ⊗ reduce the fiscal burden on host Governments by reducing the probability of early termination buyout obligations or more explicit host Government guarantees being crystallised, and in certain eventualities reducing the quantum of such obligations;
- ⊗ reduce risk-weighted capital adequacy requirements in relation to loans to the power sector creating additional debt capacity which can be used to fund sectoral improvements;
- ⊗ create fiscal space and release Offtaker resources to focus on institutional capacity building, operational efficiency improvements and expansion and upgrades to transmission infrastructure; and
- ⊗ facilitate the move towards local currency denominated PPAs.

Regional Impact of AGC

AGC will:

- ⊗ actively trade power in the competitive markets established within the existing power pools (SAPP, WAPP, EAPP etc), increasing liquidity and efficiency;
- ⊗ be able to disaggregate the contractual supply of electricity from the physical flow of electrons;
- ⊗ work with power pools, member states and utilities to match power surpluses and deficits, and to maximize the efficient use of natural resources on a regional basis;
- ⊗ support efforts to integrate planning, power sector regulation and infrastructure investment across member states; and
- ⊗ help to build the financial and economic case for more investment in regional transmission, interconnection and grid management by increasing traded volumes.

Benefits for projects and investors

Taken together the potential impact of AGC in power markets is substantial. Each dollar invested under a 33% equity scenario generates \$5-\$6 additional financial benefit that is directly quantifiable. The operating model helps to unlock enough capacity to connect almost one million households to the grid and avoids 7m tonnes of carbon equivalent, while generating over 20,000 new skilled jobs. The table below provides a more detailed breakdown of these impacts with the total value split out over each different investor class. In terms of private sector capital, the model forecasts that AGC will be able to unlock an additional USD 1.31bn of investment in IPPs, which is a conservative estimate as it is based on no private capital incentivised through AGC's trading activities.

Impact Per USD Invested in AGC by yr 10			Total USD Impact		Investment		Contingent Liabilities		Tariff Savings		Trade	Power	Additional Impacts		
			Low	High	Total	Total	Low	High	Mid	High	Total	Inst. Capacity	Power Output		
					1,310	1,186	297	890	133	310	258	605	9,535,260	GWh	
100% Equity	Investment				USDm	USDm	USDm	USDm	USDm	USDm	USDm	MW			
Total	1,360	USDm	1.5	2.0	1.0	0.9	0.2	0.7	0.1	0.2	0.2	0.4	Power Traded		
Donor	680	USDm	2.9	4.1	1.9	1.7	0.4	1.3	0.2	0.5	0.4	0.7	2,943,374	MWh	
African Gov't	408	USDm	4.9	6.8	3.2	2.9	0.7	2.2	0.3	0.8	0.6	1.2			
DFI/Private	272	USDm	7.3	10.2	4.8	4.4	1.1	3.3	0.5	1.1	0.9	1.8	Electricity Access		
50% Equity													970,000	Hholds	
Total	680	USDm	2.9	4.1	1.9	1.7	0.4	1.3	0.2	0.5	0.4	0.7			
Donor	340	USDm	5.9	8.1	3.9	3.5	0.9	2.6	0.4	0.9	0.8	1.4	Carbon Emissions		
African Gov't	204	USDm	9.8	13.6	6.4	5.8	1.5	4.4	0.7	1.5	1.3	2.4	7,800,087	tCOe	
DFI/Private	136	USDm	14.7	20.3	9.6	8.7	2.2	6.5	1.0	2.3	1.9	3.6			
33% Equity															
Total	449	USDm	4.4	6.2	2.9	2.6	0.7	2.0	0.3	0.7	0.6	1.1	ST Employment	22,655	Jobs
Donor	224	USDm	8.9	12.3	5.8	5.3	1.3	4.0	0.6	1.4	1.1	2.2			
African Gov't	135	USDm	14.8	20.6	9.7	8.8	2.2	6.6	1.0	2.3	1.9	3.6	LT Employment		
DFI/Private	90	USDm	22.2	30.8	14.6	13.2	3.3	9.9	1.5	3.5	2.9	5.4	1,014	Jobs	

Environmental, Employment, Social and Economic Impact

AGC will:

- ⊗ avoid 9.3m tCO₂e emissions in 10 years and more than 70m tCO₂e emissions over the life of the PPAs;
- ⊗ help create over 22,000 temporary jobs in manufacturing, construction and installation over the first ten years of operations and over 1,000 long term O&M jobs by year 10;
- ⊗ create additional employment as a consequence of access to more reliable power and savings relative to emergency power costs with a particular impact on small and medium size enterprises, such as women's cooperatives;
- ⊗ improve access to basic services such as healthcare and education through improved electricity access;
- ⊗ stimulate socio-economic development, including reducing infant and maternal mortality rates, improving literacy and facilitating community-based activities and training; and
- ⊗ help avoid the economic impact of outages that can be as high as 4% of GDP and result in an average annual "drag" on economic growth of 2%.

Operating Strategy

AGC's operating strategy creates four potential revenue sources for AGC:

⊗	Sale of power purchased under long term agreements;
⊗	Sale of power on short term trades;
⊗	Income from invested capital; and
⊗	Sale of carbon credits.

AGC's two core operating activities – acting as a PPA offtaker and short term trading - will generate revenues through a margin applied to each unit of power bought and sold. This margin may vary based on the specifics of the actual projects AGC supports. For its role as a PPA offtaker selling power on to utilities/other offtakers through a PSA, AGC aims to select a margin level that generates a net reduction in the price of power paid by a utility/offtaker.

For short term trading, the AGC base model takes a conservative assumption of 10% p.a. growth of the SAPP Day-Ahead /Intra-Day markets and applies an estimated market share for AGC of 5% in year 1, growing to 20% from year 4.

AGC Funding Requirements

AGC has prepared a detailed Feasibility Study (available separately upon request). In assessing how AGC might be financed to implement the proposed operating model, the Feasibility Study considers how much capital AGC will require in order to:

- ⊗ fund operating costs before AGC becomes cash-flow positive;
- ⊗ have sufficient liquidity to enter into and deliver on trading and purchase/sale contracts; and
- ⊗ be perceived as a creditworthy offtaker.

The analysis includes a Monte Carlo simulation of the probability of defaults arising within AGC's portfolio and suggests that:

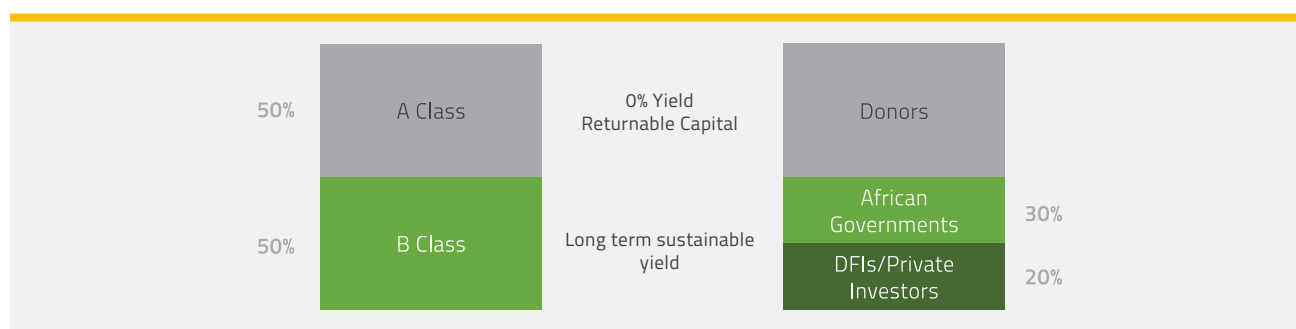
- ⊗ AGC's equity base should equal 33% of its maximum exposure (being predominately the termination payments which could arise under its PPAs) to be sufficiently creditworthy (investment grade);
- ⊗ the remaining exposure could be uncovered or covered through guarantees and/or insurance. AGC is working with potential guarantee and insurance providers such as ATI, MIGA and commercial insurers to explore means of leveraging AGC's equity; and
- ⊗ the capital structure will draw down additional funds as needed to backstop new exposures created by growth and/or recycle retained earnings to build a robust balance sheet.

The recommended equity structure is a tranching model, with distinct share classes for different investor classes. The main reasons for this are to:

⊗	Promote African ownership and political alignment with AGC's strategy;
⊗	Return capital to investors in different ways;
⊗	Accommodate donor investors; and
⊗	Allow investors to contribute capital using different instruments.

The size and terms of each tranche will ultimately be determined by investor feedback on appetite and capacity to deploy capital. The capital structure will likely evolve over time as the AGC strategy is proven and adapted to the realities of doing business on the ground.

The simple tranching structure proposed for AGC is:



This structure creates a 50/50 split between capital with no upside and capital that generates returns – the exact ratio can be adapted depending on what investors are looking for in terms of yield; if the market feedback is that investors are seeking higher returns, the proportion of returnable capital can be increased (or else the price and volume of the power traded will need to increase on the same capital base). If investors are willing to take more risk and lower returns, the capital structure can be weighted to allow them a greater share and reduce the donor returnable capital tranche.

It is proposed that tranching equity is sourced from some or all of:

- Ⓧ African governments seeking to participate in order to play a direct role in driving and owning the AGC concept;
- Ⓧ donors/equivalent grant and concessional capital providers seeking to catalyse private sector investment in the African power sector;
- Ⓧ DFIs active in African power sector looking to promote innovative, market-based solutions for improving the environment for commercial investment and risk mitigation;
- Ⓧ impact investors and philanthropic organisations (e.g. Foundations, NGOs) seeking to contribute to developmental impact through mission-related investment; and
- Ⓧ strategic commercial capital, institutional investors and venture capital investors seeking market rates of return.

Assuming that AGC (a) has equity to the value of 33% of its exposure with 50% of such equity comprising non-interest/dividend-bearing returnable capital, and (b) charges a USDc 0.3 / kWh margin on power sales, the model shows concessional returns of 2.8% on the remaining equity and protection of capital; however, the return profile and long term financial sustainability of AGC may be enhanced either by increasing the margin (noting the material tariff reduction expected to be caused by AGC), or for certain classes of investors via tranching.

The process for setting margins should be transparent and operate in collaboration with the key regulators and utilities, but one reasonable input may be selecting a target that is able to attract sufficient capital into AGC (and future trader/intermediary market entrants). AGC is more likely to attract sufficient capital (from a wider universe of investors) if the Class B shareholder IRR is e.g. 6% versus 2.8%. Using illustrative numbers and assuming a 33% equity base, investors can increase IRRs to 6% by increasing the PPA margin to USDc 0.7/kWh or higher. That would be comparable to other impact investment and development finance vehicles. To achieve returns of 10% or more, AGC would need to charge PPA margins of USDc 1.2-1.5 kWh. The margin AGC is able to charge will also be a factor of the reduction in PPA tariffs which AGC can achieve.

Conclusion and Next Steps

Based on the analysis contained in our Feasibility Study, AGC represents a financially viable means of helping more projects achieve bankability and bringing larger volumes and new sources of capital to African power markets. AGC can also help streamline African utilities' engagement with IPPs, reduce the time and effort required to bring transactions to close, relieve the burden of providing sovereign guarantees and, in the process, help to create the space necessary to implement measures to achieve long term creditworthiness of African utilities and improve domestic power markets. However, many concrete details in terms of the legal structure, governance, operating model, capitalization and financial performance require ongoing feedback from potential investors and promoters of the concept. AGC has garnered significant momentum and interest in the African and international development community. That momentum may require quick action to pilot the AGC concept and it is anticipated that AGC's business will need to be trialled in a small number of countries initially in order to prove the model before being rolled out across the region and continent.

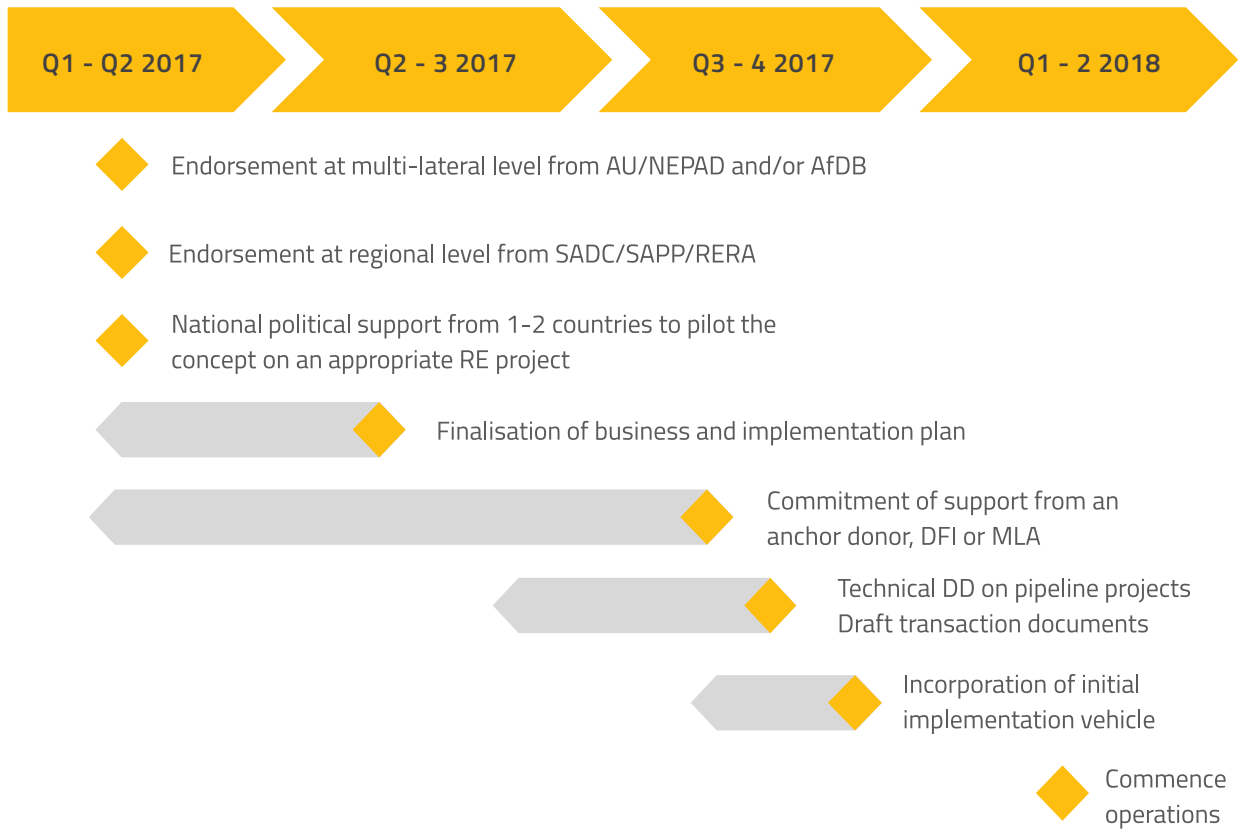
Political will and endorsement by African institutions such as the AfDB, AU and relevant regional entities (e.g. SADC, SAPP and RERA in the Southern African context) should significantly accelerate this process.

Beyond the strategic activity required to manage and grow this political support, AGC also plans to refine its business case, transitioning from the Feasibility Study's assessment of whether or not the concept has merit to more detailed and structured approach on how the concept will be implemented. The key components of this will include:

- Ⓧ supplementing AGC's team to include additional expertise to take the concept to market;
- Ⓧ creating the legal structures required to execute the operating model in AGC's target geographies;

- ⊗ finalising AGC's operating policies and procedures, governance structures and transaction documentation;
- ⊗ identifying suitable projects for proof of concept;
- ⊗ pursuing SAPP membership;
- ⊗ preparing a business case and additional investor outreach materials; and
- ⊗ refining the concept with a small number of potential anchor investors and other stakeholders.

AGC Next Steps Timeline



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Prakash D Hirani	General Manager, NETRA NPTC Ltd
Rentia van Tonder	Head of Power, Standard Bank
Robert Ashdown	Senior Originator Energy, Vice President, Products & Global Markets, Swiss Re
Richard Temple	Co-Head of Africa, McCarthy Tétrault
Roger Garman	Investment Analyst, Sustainable Development Investment Partnership (SDIP), World Economic Forum
Roman Zhukovskiy	Alternate Executive Director: EDS19, World Bank
Rumundaka Wonodi	Chairman & CEO, ZKJ Energy Partners Limited
Ryan Anderson	Head of Renewable Energy advisory services at Multiconsult/NORPLAN
Sakkie Leimecke	Head, Energy E&T Nedbank Corporate and Investment Banking
Sarah Lawan	Senior Programme Officer, NEPAD Planning & Coordinating Agency
Simon Currie	Global Head of Energy, Norton Rose Fulbright LLP
Simon Hall	Former Co-Head of Finance, Freshfields Bruckhaus Deringer LLP
Shiddika Mohamed	Group Director, EnergyNet
Sofia Sattarova	Partner, Baker Botts LLP
Stacy Swann	Sustainable Energy for All
Steven Grin	Managing Partner at Lateral Capital
Steve McCauley	Executive Leadership Coach
Taylor Ruggles	Regional Energy Counselor for Africa, U.S. Department of State
Titus Chongo Mwandemena	Chief Commercial Officer, Copperbelt Energy Corporation Plc
Tom Heller	Chairman of the Board and Senior Strategic Adviser, Climate Policy Initiative
Vibhuti Jain	Financial Solutions Lead, Power Africa
Vivek Mital	Managing Director, Millennium Resource Strategies
Vivek Shinde Patil	Senior Manager, Technical Applications, PerkinElmer
Vladimir Maodus	Executive Director, CEE Investment Banking
Wendy De La Harpe	Conference Producer, African Utility Week
Zahed Sibda	Managing Director, Fieldstone Africa



Africa GreenCo Team

Ana Hajduka	Founder & CEO
Cathy Oxby	Commercial Director
Lovemore Chilimanzi	Technical Director
Penny Herbst	Non Executive Director
Tantra Thakur	Advisory Committee Member
Philippe Niyongambo	Advisory Committee Member
Rt Hon Andrew Mitchell MP	Advisory Committee Member

Brief biographies of the team are set out on the following page.

Africa GreenCo in its current form is a UK not-for-profit company limited by guarantee which has been established with the sole purpose of developing the AGC concept to its pre-implementation stage. This UK entity is entirely separate to the operational AGC entity discussed in the Feasibility Study, which will be an African based entity, incorporated subject to political and international community buy in.

Consultants



Financial: Lions Head Global Partners
Lions Head is a specialized financial advisory firm based in London and Nairobi, experienced in designing, structuring innovative finance platforms, especially for power (Africa50, AREF, GIIF, TCIFF)
With special thanks to: **Harry Guinness**



Legal: Shearman & Sterling LLP
Sherman and Sterling is a leading international project finance, corporate and commercial law firms, active in Africa for over 50 years.
With special thanks to **Monica Lamb**



Technical: PPA Energy
PPA's Energy's staff are former leaders within SADC utilities and have been involved with the SAPP establishment and operations (governance, regulations, technical constraints, commercial issues, trading etc)
With special thanks to: **Lovemore Chilimanzi**



Regulatory & Governance: GP3 Institute
GP3 Institute is a global advisory network of governance, development, legal and program operation advisors. The institute provides research and advisory support for public-private initiatives comprised of States, subnational units, multilateral development and finance institutions and private sector participants including for profit and non-profit organizations.
With special thanks to: **Tim Nielander** and **Ben Kioko**

Procurement: Rene Meyer (Senior Procurement and Renewable Energy Policy Expert)



Risk Management: Strategia Worldwide
Strategia Worldwide use proven strategic planning methodology to protect companies from risk in complex, volatile, uncertain environments and apply a comprehensive approach to corporate risk management, drawing on their experience of implementing strategy in dangerous and difficult environments and the political, developmental, security and commercial expertise of their highly experienced senior team.
With special thanks to **Iain Pickard**

Africa GreenCo Team



Ana Hajduka
Founder & Chief Executive Officer

Ana is qualified as a lawyer in both England & Wales and the State of New York, and is an infrastructure and energy professional with more than 12 years' experience in a variety of transactions including project finance, public-private partnerships and project development, working on energy and infrastructure projects in emerging markets.

Ana trained with Allen & Overy LLP and went on to work for Fulbright & Jaworski LLP and Trinity International LLP, advising on a diverse range of projects within the energy sector, predominately in Sub-Saharan Africa. In March 2015, Ana was appointed by the UNECE as the Team Leader responsible for a Project Team (comprising about 30 specialists) in charge of developing international renewable energy PPP standards as part of the Sustainable Energy for All agenda.



Cathy Oxbly
Commercial Director

Cathy has more than 14 years professional experience in the infrastructure and renewable energy sectors, both as an adviser and an equity investor. She trained at Allen & Overy LLP where she worked on a diverse range of project finance transactions spanning energy and infrastructure before moving into a commercial role at HSBC

Infrastructure Fund (which became InfraRed Capital Partners). After 6 years of structuring and negotiating equity investments in a wide variety of public-private partnerships and renewable energy projects, she established her own consultancy to help developers, investors and project companies deliver well-structured and efficiently run investments by assisting them through all stages of project development, implementation and operation and also acted as a consultant to the World Bank.



Lovemore Chilimanzi
Technical Director

Lovemore is seconded to Africa GreenCo from PPA Energy/Ricardo as Africa GreenCo's Technical Director. Lovemore's core skills are in power system strategic management, operations and electricity trading having worked in this area for over 30 years. He has operated hydro and thermal power stations and

transmission networks and has negotiated, implemented and managed numerous power purchase agreements. He is a founder member of the Southern African Power Pool who was a key member in formulation, implementation, monitoring and revising the Southern African Power Pool (SAPP) control performance criteria and the SAPP regional trading rules that enabled launching of a competitive electricity market in the Southern African Region.

Lovemore holds a Diploma in Electrical Engineering from the Northern Technical College in Zambia, a post graduate Diploma in management studies and an MBA degree from the Buckingham Chilterns University College in the UK. He has lectured power utility Risk Management to utility and insurance executives, and has lectured operations management and human resource management in an MBA programme for more than nine years. He is a senior member of the South African Institute of Electrical Engineers (SAIEE).



Penny Herbst
Non-Executive Director

Penny Herbst has over 30 years of experience in an utility environment most of this in Eskom's Treasury department, where she was exposed to a diverse set of financial, commercial and legal structures that emanate from its operations. Amongst others she has managed Eskom's foreign and interest rate risk, money and capital market investments, project

finance transactions, and the structuring of projects to mitigate risks associated with projects in Africa. She led the formation of Eskom's Development Finance unit where in the role of Development Financing Manager she was instrumental raising, in excess of \$6bn, from DFI and related institutions. This included funding for Eskom's first renewable projects where she spent some time in Eskom's Renewables Unit working on bridging the gap between financing and implementation.



The Rt Hon Andrew Mitchell MP
Advisory Committee Member

The Rt Hon Andrew Mitchell MP has been the UK Member of Parliament for Sutton Coldfield since 2001. Following the General Election in May 2005, he was appointed Shadow Secretary of State for International Development. He then served as the Secretary of State for International Development from May 2010 - September 2012 and Government

Chief Whip from September - October 2012. In November 2003 he was pointed Shadow Minister for Economic Affairs and from September 2004 he was the Shadow Minister for Police. He was previously the Member of Parliament for Gedling from 1987 to 1997 during which time he held office as a Government Whip and was Minister for Social Security. He also served as a Vice Chairman of the Conservative Party 1992-93. Andrew was educated at Rugby School and studied History at Cambridge University. He was elected as President of the Cambridge Union in 1978. He served in the Army (Royal Tank Regiment) and was a United Nations Peacekeeper in Cyprus before joining Lazard, the international investment bank.



Philippe Niyongambo
Advisory Committee Member

Mr Philippe NIYONGABO is a well-known energy expert on the African continent and beyond. He has a Master of Science in Engineering Management from the University of Lawrence, Kansas, USA and a post-university degree in Energy Planning and Policy from the University of Pennsylvania, Philadelphia, USA. He also hold a bachelor degree in electrical engineering

from the ISIEM, Mons, Belgium.

From February 2005 until October 2015 he was the Head of Energy Division within the Department of Infrastructure and Energy, African Union Commission. During that period he developed key energy programs including the Program for Infrastructure Development in Africa (PIDA-energy sector), the Geothermal Risk Mitigation Facility (GRMF) and the Geothermal Regional Program for the Eastern African Countries and mobilization of over a Hundred Twenty million USD (The GRMF has allocated grants to 15 projects amounting more than 60 million USD), the establishment of Africa-EU Energy Partnership which is the most successful of the eight partnerships Joint Africa-EU Strategy launched in 2007, the SE4ALL Africa Hub Action Agenda and Investment Prospectuses for African countries and participation at the elaboration of the Africa Renewable Initiatives supported by G7 and adopted at the COP21 in Paris, France in December 2015.



Tantra Thakur
Former Head of PTC India
Advisory Committee Member

Former member of prestigious Civil Service in India, Mr Thakur has more than 40 years of experience with government, private and global companies in India, South Asia and SE Asia. Widely acclaimed as innovative professional for setting up and managing businesses, he is serving as a non-executive Member

of Board of several companies including InfraCo Development Pte Ltd and InfraCo Investment Pte Ltd, Singapore. He was advisor for Fortum India, a subsidiary of Fortum (Finland) and for the Essar Group during 2012-2014. He has provided advisory services to many other companies in the Energy Sector in India. Mr Thakur is a member of the management board of TERI University and the Faculty of Management Services of Delhi University. He was a member of the Advisory Board of TERI for a number of years and was a member of the Finance Committee of Jawahar Lal Nehru University.

He led the first electricity trading company in India/ South Asia as Chairman and Managing Director from 2000-2012. The net worth of this Rs. 60 million company rose to Rs. 24 billion during his leadership and maintained number one position throughout. He led the company to diversify into financial services through PTC India Financial Services Limited and co-sponsored the first Energy Exchange in India.

He was deputed to UNHCR for performance audit on behalf of the UN Board of Auditors. He served as a member of the Prime Minister's Task Force on the socio-economic development of Jammu & Kashmir in India.

For more information please contact Ana Hajduka (Africa GreenCo Founder and CEO) at ana.hajduka@africagreenco.com or on +447789204363