SDG7 Energy Compact of Aid Africa, Inc
A next Decade Action Agenda to advance SDG7 on sustainable energy for all, in line with the goals of the Paris Agreement on Climate Change

SECTION 1: AMBITION

1.1. Ambitions to achieve SDG7 by 2030. *[Please select all that apply, and make sure to state the baseline of each target]*
(Member States targets could be based on their NDCs, energy policies, national five-year plans etc. targets for companies/organizations could be based on their corporate strategy)

☐ **7.1.** By 2030, ensure universal access to affordable, reliable and modern energy services.	Target(s): Replace traditional open-fire cooking with energy efficient cookstoves Time frame: Incremental over next eight years, in accord with Section 3 Outcomes Context for the ambition(s): For the past ten years, we have been replacing dirty open-fire indoor cooking pits with less dirty, far more efficient rocket stoves. Huts using our stoves have clean ceilings, while huts with traditional open-fires have black ceilings. We know, and the villagers know, that these rocket stoves improve their lives by decreasing cataracts caused by smoke, cardio-pulmonary diseases, and injuries to children from open fire pits. Villagers are eager to have these stoves. Due to the relationships we've developed over the years, we are confident they would welcome trying a future cleaner version as well. Ideally, we would love to transition to an even cleaner model stove and we plan to do so in the future. However, the villagers we work with do not currently have electricity and they live in extreme poverty. They do not have the money to purchase LP canisters or fuel, even if they had an LP stove. If the government or some other entity wanted to help fund this, we would be thrilled to do all we can to bring about the cleanest stoves possible in the shortest amount of time. We have a great crew who have worked to improve and test stoves and are eager to get them distributed and keep up maintenance. We provide our stoves for free, making them sustainable in rural Uganda. Due to poverty, other forms would likely not be used unless fuel was cheap and easy to access. We believe that the process of "stacking" would occur, whereby people revert to open-fires when they can't afford the fuel or don't have easy access to obtain it. We are currently collaborating with various organizations studying solar stoves. While efficient solar stoves are not yet ready for use, they are being developed. Our hope is to work with investors to eventually replace rocket stoves with a solar model that is affordable, practical, and sustainable for a large rural poor population. We began our work with our first engineers creating a model of the current rocket stove we use. The process of developing it was funded by Rotary International. Through the years we have worked to keep making it better. That is what we will continue doing and we would love to be part of the solution of having fully green clean stoves in the coming years. Our current efficient rocket stoves use about one third of the wood of traditional stoves and reduce black carbon by about 75%. Our stoves have been tested and certified by the United Nations' Clean Development Mechanism (CDM). Each stove is fixed in place and its GPS coordinates are recorded and mapped. Each stove is maintained in "as new" condition at least one year as required by The Gold Standard carbon network platform. Monthly reports are sent to the Uganda Carbon Bureau that reviews our documents. Our stoves use only slim branches that can be harvested from adult trees without cutting them down. Aid Africa maintains a tree nursery that produces saplings to reforest areas that were cleared in the past, while providing villagers with a sustainable wood supply for their stoves. We also provide additional fruit trees for nutrition and economic development. We have an established indigenous staff that works with villagers to create their own stoves, using local clay for bricks and other local materials. Our staff teaches villagers how to build them, use them efficiently, and maintain them. They also get commitments to eliminate use of traditional stoves in exchange for our rocket stoves. Our staff visits villagers later for stove testing and maintenance. We are a non-profit that does not charge for the stoves or our services. The next phase of development for Aid Africa is to introduce stoves with chimneys that will remove even more hazardous particles from huts, especially fine PM 2.5 particles, which are most damaging to lungs We endeavor to engineer and make this improvement to 5,000 stoves a year over the next three years. At the

	same time, we will study ways to implement solar cooking. Our ceramic rocket stoves are a big improvement decreasing carbon emissions and health hazards, and an affordable and doable model while we work on an improved future version. The essential requirements for a next-generation stove are that it must have the ability to store energy for nighttime use or days with little sunshine, eliminate the use of wood, support indigenous manufacture with local materials, and be easy to use and maintain, with a three-five year lifespan. We already have proven mechanisms for manufacture, delivery, distribution, training, testing, auditing, and maintenance of our current model. We are in conversations with engineers from California Polytechnical School and the Insulated Solar Electric Cooking (ISEC) Team, Eastern Illinois University, Colorado State University, the University of Illinois and their start-up company "Sunbuckets", a Belgian Ambassador and Rotarians from Ethiopia and Kenya who hope to collectively seek a multi-national grant for solar stove development in Eastern Africa.
☐ **7.2.** By 2030, increase substantially the share of renewable energy in the global energy mix.	Target(s): Time frame: Context for the ambition(s):
☐ **7.3.** By 2030, double the global rate of improvement in energy efficiency.	Target(s): Time frame: Context for the ambition(s):
☐ **7.a.** By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.	Target(s): Time frame: Context for the ambition(s):
☐ **7.b.** By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programs of support.	Target(s): Replace Traditional Open-Fire Cooking with Energy Efficient Cookstoves Time frame: Incremental over next eight years in accord with SECTION 3 "Outcomes" Context for the ambition(s): This project will take place in rural Uganda, a least developed country, and may expand into neighboring least developed countries, like South Sudan.

1.2. Other ambitions in support of SDG7 by 2030 and net-zero emissions by 2050. ***[Please describe below e.g., coal phase out or reforming fossil fuel subsidies etc.]***

Target(s): Reduce carbon emission by introducing and installing less pollutant rocket stoves
Time frame: 2022-2030
Context for the ambition(s):
To estimate the total amount of carbon emission reduction, we start with four assumptions.
-Each stove reduces 2.064 tons of emissions
-5000 stoves are distributed per year for 8 years
-There is a 5% drop off per year (i.e., 95% of existing stoves are functional each year)
-Because stoves are distributed throughout the year - not just at the beginning - assume new stoves are productive for 5 months of their first year
Using these assumptions:
-Total number of functional stoves in use after 8 years = 31,940
-Cumulative stove-years over 8 years = 152,137
-Total carbon removed after 8 years = 249,062 tons
Simultaneously, we will be researching and experimenting with solar stove options, which would reduce emissions far greater.

SECTION 2: ACTIONS TO ACHIEVE THE AMBITION

2.1. Please add at least one key action for each of the elaborated ambition(s) from section 1. *[Please add rows as needed].*

Description of action (please specify for which ambition from Section 1) Increase stove production and distribution of six-brick and two-brick stoves	*Start and end date* 01/22-12/22
Description of action (please specify for which ambition from Section 1) Engineer and test chimney installations in 25 huts	*Start and end date* 01/22-12/22
Description of action (please specify for which ambition from Section 1) Build and install chimneys in huts for all newly installed rocket stoves	*Start and end date* 01/23-12/24
Description of action (please specify for which ambition from Section 1) Partner to develop affordable clean renewable energy stoves	*Start and end date* 3/22-12/24

SECTION 3: OUTCOMES

3.1. Please add at least one measurable and time-based outcome for **each** of the actions from section 2. *[Please add rows as needed].*

Outcome Manufacture and distribute 5000 6-brick stoves, per year, for the next three years	*Date* 12/24
Outcome Chimneys removing PM25 particles installed in 25 huts	Date 12/22
Outcome Chimneys installed in 10,000 huts	Date 12/24
Outcome A first clean, affordable, renewable energy stove prototype installed	Date 12/24
Outcome 25,000 new clean renewable energy stoves installed	Date 12/30
Outcome Expand manufacture, installation, and maintenance of clean stoves beyond rural Gulu, Uganda	Date 12/31 & ongoing

SECTION 4: REQUIRED RESOURCES AND SUPPORT

4.1. Please specify required finance and investments for **each** of the actions in section 2.

Cost for manufacture of 15,000 additional stoves brick stoves - $150,000 Replacement of old truck for hauling bricks - $ 30,000 Motorcycle transportation for staff - $ 30,000 Additional Personnel costs for 8 years $200,000 Chimney manufacture and installation (10,000) - $100,000 Development costs for clean renewable stoves - $ 50,000 New stoves and replacement costs $500,000 The prices for a future model are approximations only. We will need a source of capital to implement this project. We could share carbon credits earned from the stoves produced with an investor or developer wishing to work with us. We have built trusting connections with many rural villages around Gulu, and we have a competent staff to perform the work. We want to help improve the lives and health of rural Ugandans, and decrease global warming by removing carbon from the atmosphere

4.2. [For countries only] In case support is required for the actions in section 2, please select from below and describe the required support and specify for which action.

[Examples of support for Member States could include: Access to low-cost affordable debt through strategic de-risking instruments, capacity building in data collection; development of integrated energy plans and energy transition pathways; technical assistance, etc.]

☐Financing	*Description*
☐ In-Kind contribution	*Description*
☐ Technical Support	*Description*
☐ Other/Please specify	*Description*

SECTION 5: IMPACT

5.1. Countries planned for implementation including number of people potentially impacted.

We estimate that 5000 families receiving stoves per year represent almost 28,000 individual adults and children, each year, living in real villages near Gulu, Uganda. Over the course of the next 8 years we will impact approximately a quarter of a million lives. With developmental assistance, we could produce even more stoves and extend our geographical reach.

5.2. Alignment with the 2030 Agenda for Sustainable Development – Please describe how **each** of the actions from section 2 impact advancing the SDGs by 2030.
[up to 500 words, please upload supporting strategy documents as needed]

As the United Nation's SDG7 overview webpage attests, "one third of the world's population use dangerous and inefficient cooking systems." These are the people Aid Africa's stove replacement program affects.

Aid Africa has worked in the rural villages near Gulu, Uganda for over 10 years distributing safe, fuel-efficient six-brick rocket stoves that replace the dangerous and inefficient open fires that families have traditionally used. Our rocket stoves use about one third of the wood and burn more efficiently than open fires they replace; each open fire that is replaced by an efficient stove means up to 70% fewer emissions into the air.

Each key action described below is part of a sequential plan to decrease Ugandan villagers' dependence on carbon-based wood fuel. Given the level of poverty in the areas where we work, Aid Africa focuses on incremental progress toward clean energy using transitional technologies that utilize inexpensive and local materials. With additional support, we hope to develop even cleaner stoves that use renewable energy sources. Our plan continues with the expanded distribution of these cleaner stoves into other parts of Uganda and Africa, beyond the villages surrounding Gulu.

Our actions align with SDG 7, especially targets 7.1 and 7.b, in the following ways:

Action 1: Increase stove production and distribution of six-brick and two-brick rocket stoves.
Aid Africa's stove replacement program reduces the amount of firewood and consequent pollution created during essential cooking. Aid Africa will supply affordable transitional products that bridge to renewable fuel sources. This dividend increases with each stove replaced.

Action 2: Engineer and test chimney installations in 25 huts.
Before new technologies, like chimneys, are widely distributed and installed, they must be tested. Chimneys do not reduce fuel consumption, but improve indoor air safety and reduce the health consequences of wood-burning stoves.

Action 3: Build and install chimneys in huts for all newly installed rocket stoves.
See Action 2.

Action 4: Partner to develop affordable, clean, renewable energy stoves.
We have developed trusting partners in the villages we have served who would accept stoves using renewable fuels if we offered them. We need financial partners for this crucial step in development. We hope to avoid the usual transition from wood-burning stoves to stoves burning other carbon-based fuels like kerosene.

Action 5: Phase out wood-burning rocket stoves, replacing them with cleaner stoves from Action 4.
This action moves us from prototypes developed in Action 4 to practical, affordable distribution.

Action 6: Expand clean stove project throughout rural Uganda and beyond.
After experiencing success in the villages surrounding Gulu, we will expand our efforts to other parts of Uganda and other least developed countries.

While we have focused on the alignment of our actions on SDG7 for the purposes of this energy pact proposal, we hope the reader will appreciate the large impacts our stove replacement project will also have on SDG3 (Ensure healthy lives and promote well-being for all at all ages) by reducing the exposure of women and their children to indoor smoke and potential life damaging burns from open-fires.

5.3. Alignment with Paris Agreement and net-zero by 2050 - Please describe how **each** of the actions from section 2 align with the Paris Agreement and national NDCs (if applicable) and support the net-zero emissions by 2050.
[up to 500 words, please upload supporting strategy documents as needed]

The Paris Agreement aims to keep global temperatures from rising more than 2 degrees (preferably 1.5 degrees) by the end of the century. In order to reach this ambitious goal, countries need to act quickly in order to move toward zero-net emissions by 2050. Recognizing that different countries have different needs and capacities, the Paris Agreement requires each cooperating country to develop its own plan for reducing emissions and adapting to climate change, the Nationally Determined Contributions (NDC).

Uganda's NDC seeks to "pursue a low-carbon development pathway and reduce the vulnerability of the population, environment and economy to the impacts of climate change by implementing measures and policies that build resilience." The country aims to reduce emissions by 22% compared to business as usual by 2030.

The rural villages of Uganda produce a small carbon footprint, with most of it coming from firewood burned for open-fire cooking. In these villages, the most effective way of reducing carbon emissions is to increase the energy efficiency of cookstoves.

Aid Africa's actions align with Uganda's NDCs arising from the Paris Agreement and with becoming net-zero by 2050 in the following ways:

Action 1: Increase stove production and distribution of six-brick and two-brick rocket stoves.
Aid Africa's stove replacement program reduces the amount of carbon-based fuel and consequent pollution needed for essential cooking, an affordable transitional technology that bridges to renewable fuel sources. These stoves produce emission reductions that are greater than Uganda's NDC goal of 22%. This dividend increases with each stove replaced.

Action 2: Engineer and test chimney installations in 25 huts.
Aprovecho Research Center in Cottage Grove, Oregon is one of the best stove testing and development centers in the world. It is supplying us with plans for an improved stove that they have designed and tested. They are willing to give us access to any improvements they develop. Aprovecho gives us a source of quality engineering and testing that puts us far ahead of working on our own.
Before new technologies are widely distributed and installed, they must be tested. Chimneys, for example, do not reduce fuel consumption, but improve safety and reduce the health consequences of wood-burning stoves. These improvements in health may increase the resiliency of villagers as they face the greater health challenges of climate change down the road.

Action 3: Build and install chimneys in huts for all newly installed rocket stoves.
See Action 2.

Action 4: Partner to develop affordable, clean, renewable energy stoves.
We have developed trusting partners in the villages we have served who would accept stoves using renewable fuels if we offered them. We need financial partners for this crucial step in development. We hope to avoid the usual transition from wood-burning stoves to stoves burning other carbon-based fuels like kerosene. This will enable the Ugandan villages to easily exceed the government's 22% emission reduction goal, bringing them close to net-zero.

Action 5: Phase out older model rocket stoves, replacing them with cleaner stoves from Action 4.
This action moves us from prototypes developed in Action 4 to practical, affordable distribution.

Action 6: Expand clean stove project throughout rural Uganda and beyond.
After experiencing success in the villages surrounding Gulu, we will expand our efforts to other parts of Uganda in support of the country's NDCs.

SECTION 6: MONITORING AND REPORTING

6.1. Please describe how you intend to track the progress of the proposed outcomes in section 3. Please also describe if you intend to use other existing reporting frameworks to track progress on the proposed outcomes.

We use a system of ESRI story mapping that records and displays the GPS coordinates for every stove distributed. Each of the outcomes listed in section 3 is tracked and measured annually with this system. Our staff also produces monthly reports to monitor our progress of stove distribution

SECTION 7: GUIDING PRINCIPLES CHECKLIST

Please use the checklist below to validate that the proposed Energy Compact is aligned with the guiding principles.

I. Stepping up ambition and accelerating action - Increase contribution of and accelerate the implementation of the SDG7 targets in support of the 2030 Agenda for Sustainable Development for Paris Agreement

I. 1. Does the Energy Compact strengthen and/or add a target, commitment, policy, action related to SDG7 and its linkages to the other SDGs that results in a higher cumulative impact compared to existing frameworks?

☒Yes ☐No

I.2. Does the Energy Compact increase the geographical and/or sectoral coverage of SDG7 related efforts? ☒Yes ☐No

I.3. Does the Energy Compact consider inclusion of key priority issues towards achieving SDG7 by 2030 and the net-zero emission goal of the Paris Agreement by 2050 - as defied by latest global analysis and data including the outcome of the Technical Working Groups? ☒Yes ☐No

II. Alignment with the 2030 agenda on Sustainable Development Goals – Ensure coherence and alignment with SDG implementation plans and strategies by 2030 as well as national development plans and priorities.

II.1. Has the Energy Compact considered enabling actions of SDG7 to reach the other sustainable development goals by 2030? ☒Yes ☐No

II.2. Does the Energy Compact align with national, sectoral, and/or sub-national sustainable development strategies/plans, including SDG implementation plans/roadmaps? ☒Yes ☐No

II.3. Has the Energy Compact considered a timeframe in line with the Decade of Action? ☒Yes ☐No

III. Alignment with Paris Agreement and net-zero by 2050 - Ensure coherence and alignment with the Nationally Determined Contributions, long term net zero emission strategies.

III.1. Has the Energy Compact considered a timeframe in line with the net-zero goal of the Paris Agreement by 2050? ☒Yes ☐No

III.2. Has the Energy Compact considered energy-related targets and information in the updated/enhanced NDCs? ☒Yes ☐No

III.3. Has the Energy Compact considered alignment with reaching the net-zero emissions goal set by many countries by 2050? ☒Yes ☐No

IV. Leaving no one behind, strengthening inclusion, interlinkages, and synergies - Enabling the achievement of SDGs and just transition by reflecting interlinkages with other SDGs.

IV.1. Does the Energy Compact include socio-economic impacts of measures being considered? ☒Yes ☐No

IV.2. Does the Energy Compact identify steps towards an inclusive, just energy transition? ☒Yes ☐No

IV.3. Does the Energy Compact consider measures that address the needs of the most vulnerable groups (e.g. those impacted the most by energy transitions, lack of energy access)? ☒Yes ☐No

V. Feasibility and Robustness - Commitments and measures are technically sound, feasible, and verifiable based a set of objectives with specific performance indicators, baselines, targets and data sources as needed.

V.1. Is the information included in the Energy Compact based on updated quality data and sectoral assessments, with clear and transparent methodologies related to the proposed measures? ☒Yes ☐No

V.2. Has the Energy Compact considered inclusion of a set of SMART (specific, measurable, achievable, resource-based and time based) objectives? ☒Yes ☐No

V.3. Has the Energy Compact considered issues related to means of implementation to ensure feasibility of measures proposed (e.g. cost and financing strategy, technical assistant needs and partnerships, policy and regulatory gaps, data and technology)? ☒Yes ☐No

SECTION 8: ENERGY COMPACT GENERAL INFORMATION

8.1. Title/name of the Energy Compact

Energy Compact for Clean Cookstoves with Aid Africa, Inc.

8.2. Lead entity name (for joint Energy Compacts please list all parties and include, in parenthesis, its entity type, using entity type from below)

Peter Keller, Executive Director
Nancy Bacon, Executive Director, Elect

8.3. Lead entity type

☐ Government ☐ Local/Regional Government ☐ Multilateral body /Intergovernmental Organization

☒ Non-Governmental Organization (NGO) ☐ Civil Society organization/Youth ☐ Academic Institution /Scientific Community

☐ Private Sector ☐ Philanthropic Organization ☐ Other relevant actor

8.4. Contact Information

Nancy@aidafrica.net, 01-661-900-5536; and Peter@aidafrica.net

8.5. Please select the geographical coverage of the Energy Compact

☒Africa ☐Asia and Pacific ☐Europe ☐Latin America and Caribbean ☐North America ☐West Asia ☐Global

8.6. Please select the Energy Compact thematic focus area(s)

☐ Energy Access ☒ Energy Transition ☐ Enabling SDGs through inclusive just Energy Transitions ☐ Innovation, Technology and Data ☐ Finance and Investment.

SECTION 9: ADDITIONAL INFORMATION (IF REQUIRED)

Please provide additional website link(s) on your Energy Compact, which may contain relevant key documents, photos, short video clips etc.
Please see: https://www.aidafrica.net and https://www.aidafrica.net/rocket stoves