



**Observatoire Europe-Afrique 2030**

**Data sheet n° 43**

**Enterprise : ACE Lesotho (African Clean Energy)**

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Degree of accuracy of the information contained in the data sheet

**High**

## 1. Activity of the enterprise

African Clean Energy is a B Corp-certified enterprise which produces and distributes solar-biomass hybrid energy systems in developing countries. The company was founded in Lesotho, where it manufactures the ACE One Energy System. The company's headquarters are in Amsterdam, the Netherlands.

The ACE One was developed in 2014 with support from crowdfunding and the Global Alliance for Clean Cookstoves. As of 2017, the company is active in Lesotho, Cambodia and Uganda. Stephen Walker, an expert in manufacturing, helped set up ACE's factories in Lesotho and Cambodia.

In Lesotho, ACE has been operating there since 2014. The headquarters are located in the capital city of Maseru, which is also the location of the flagship factory where ACE One is manufactured since 2014.

ACE is operating in Uganda since 2017.

African Clean Energy is a for-profit company. The ACE One is sold direct to consumers using an instalment-based payment model at a cost of about \$100 each. This ensures that the product is affordable to people who would be unable to afford a large lump sum payment. To date, the company has sold about 60,000 units.

Staff : 205

**Point to be checked: Is the Maseru manufacturing plant in activity in 2024?**

## 2. Product range

The ACE One energy system is an integral energy solution for off-the-grid households in the developing world. The device uses a combination of thermal and electric generation to provide a clean, smokeless cooking experience for its users. The solar-powered electricity it generates can also be used for phone charging and lighting.

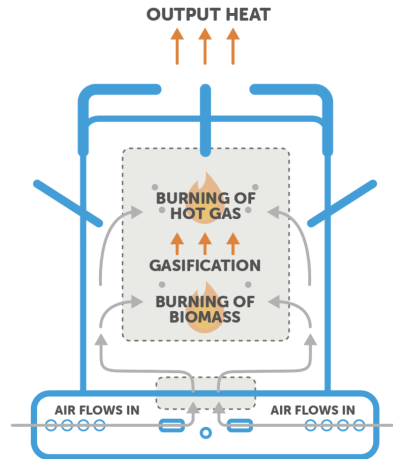
The ACE One can burn any type of solid biomass fuel (crop residue, animal waste, or small sticks). This displaces the need for energy-dense harvested wood or charcoal. It also burns fuel more efficiently than traditional open fire stoves and thus uses 50-85% less fuel.



### How ACE One works

The burning chamber of the ACE One is designed to reduce smoke emissions to a negligible level by creating clean biomass combustion :

- Ventilator blows oxygen into the top & bottom of the burning chamber
- Oxygen causes temperature of the fire within the chamber to increase to approximately 1000°C, at which point biomass will gasify
- Hot gas floats to the top of the burning chamber where it meets more oxygen & combusts completely.



Dimensions : 33 x 33 x 35 cm

Weight: 4.6 kg

Durability : 8-12 Years

Fuel consumption : Full fan: 750 g (8mm pellets)/50 mins. / Low fan: 750 g (8mm pellets)/100 mins.

The following video describes in detail the ACE One and its manufacturing in Lesotho :

[https://www.google.com/search?q=ace+one+energy+system+lesotho+manufacturing&scasv=33160aea3cdc4e48&rlz=1C5CHFA\\_enFR800FR803&biw=1280&bih=715&ei=2QLjZer1H7-gkdUPvcqAkAc&ved=0ahUKEwigxu7RstWEAxU\\_UKQEHT0IAHIQ4dUDCBA&uact=5&oq=ace+one+energy+system+lesotho+manufacturing&gs\\_lp=Egxnd3Mtd2l6LXNlcnAiK2FjZSBvbmUgZW5lcmd5IHN5c3RlbSBsZXNvdGhvlG1hbnVmYWN0dXJpbmcyChAhGAoYoAEYwwRI7RhQ5QZY2xVwAXgBkAEAmAFMoAGMA6oBATa4AQPIAQD4AQGYAgegAqYDwgIKEAAYRxiWBBiwA8ICCBAAGIAEGKIEmAMAiAYBkAYCkgcBNw&scient=gws-wiz-serp#fpstate=ive&vld=cid:0f5808df,vid:iNxWytfgPbA,st:0](https://www.google.com/search?q=ace+one+energy+system+lesotho+manufacturing&scasv=33160aea3cdc4e48&rlz=1C5CHFA_enFR800FR803&biw=1280&bih=715&ei=2QLjZer1H7-gkdUPvcqAkAc&ved=0ahUKEwigxu7RstWEAxU_UKQEHT0IAHIQ4dUDCBA&uact=5&oq=ace+one+energy+system+lesotho+manufacturing&gs_lp=Egxnd3Mtd2l6LXNlcnAiK2FjZSBvbmUgZW5lcmd5IHN5c3RlbSBsZXNvdGhvlG1hbnVmYWN0dXJpbmcyChAhGAoYoAEYwwRI7RhQ5QZY2xVwAXgBkAEAmAFMoAGMA6oBATa4AQPIAQD4AQGYAgegAqYDwgIKEAAYRxiWBBiwA8ICCBAAGIAEGKIEmAMAiAYBkAYCkgcBNw&scient=gws-wiz-serp#fpstate=ive&vld=cid:0f5808df,vid:iNxWytfgPbA,st:0)

The ACE One has been laboratory tested by Colorado State University (2014) and Covair (2016). In these tests, the ACE One consistently achieved IWA-ISO tier 3- 4 standards on emissions and efficiency. It received a 'best' rating for safety with a score of 97 out of 100. This means that the ACE One has the cleanest, safest and most efficient multi-fuel cooking capability in the market.

Through efficient combustion, the ACE One can reduce fuel use by up to 70% compared to an open fire. In Cambodia, researchers found that the product reduces fuel use by 52% compared to traditional Khmer stoves. By using the ACE One, customers can cut their basic energy expenses by up to 80%.

The ACE One burns biomass without smoke, reducing CO and PM 2.5 emissions by as much as 95% compared to an open fire.

### 3. Sources of information

<https://africancleanenergy.com/>

[https://en.wikipedia.org/wiki/African\\_Clean\\_Energy](https://en.wikipedia.org/wiki/African_Clean_Energy)

### 4. Contacts

ACE Netherlands: African Clean Energy BV, Laagte Kadijk 153h, 1018 ZD Amsterdam, The Netherlands

ACE Lesotho: Plot 24, Ha Thetsane Industrial Park, Maseru 100, Lesotho

Name	Function	email	Phone
Rethabile Mafura	Country Director		
Mamello Mpiti	Senior Sales Coordinator		
Ruben Walker	Founder   CEO   Shareholder   Boardmember Commercial Director	<a href="mailto:ruben@ace.co.ls">ruben@ace.co.ls</a>	+31 6 33831208