

# Advancing sustainable AGRiculture through off-grid energy and COOLing solutions in Africa

## Fact Sheet

### Project Information

**AGRI-COOL**

Grant agreement ID: 101147102

**EC signature date**

9 April 2024

**Start date**

1 June 2024

**End date**

31 May 2028

**Funded under**

Climate, Energy and Mobility

**Total cost**

€ 6 096 397,81

**EU contribution**

€ 4 999 393,01

**Coordinated by**

UNIVERSITEIT TWENTE



Netherlands

## Objective

Large parts of sub-Saharan Africa have no or only limited access to the electricity grid. Therefore, many farmers cannot adequately cool their product. This results in an enormous loss and waste of food, which is responsible for more than 10% of total anthropogenic greenhouse gas emissions worldwide. Cooling the food by inefficiently using generators on fossil fuels – the most common alternative – is not climate friendly either.

AGRI-COOL will address both problems with a containerized solution in which food can be stored and cooled. It combines the use of photovoltaic technology, thermal energy storage by phase change materials, chillers, and smart control strategies to

offer an affordable, scalable and climate friendly solution.

The AGRI-COOL system will be demonstrated in rural communities in South Africa, Cape Verde, Somalia, and Zimbabwe to showcase its adaptability to different climatic conditions. A life cycle assessment following the cradle-to-grave approach will be conducted to show the system's impact on environment and Paris targets compared with competing approaches. A comprehensive market and business strategy will be developed for adoption of the system after the project. Training programs for farmers, technicians, and engineers that are tailored to local conditions will ensure that the system can be installed, operated, and maintained locally. Lastly, an advanced course for third party engineers from various African countries will be organized on the design, customization, and broader economic and social aspects of the system.

AGRI-COOL is going to empower rural African communities and industries by enhancing food security, reducing waste and fostering economic growth while contributing to achieve the African countries' targets of the Paris Agreement. A balanced consortium with about the same share of person months and budget for African and European partners ensures that African problems are tackled by solutions tailored to African conditions.

## Fields of science

[agricultural sciences](#) > [agriculture, forestry, and fisheries](#) > [agriculture](#) > **[sustainable agriculture](#)**

[engineering and technology](#) > [mechanical engineering](#) > [thermodynamic engineering](#) > **[heat engineering](#)**

[medical and health sciences](#) > [health sciences](#) > **[nutrition](#)**

[engineering and technology](#) > [environmental engineering](#) > **[energy and fuels](#)**

## Keywords

[Cold storage](#)

[Cold room](#)

[Agri-PV](#)

[PCM](#)

## Programme(s)

[HORIZON.2.5 - Climate, Energy and Mobility](#)

MAIN PROGRAMME

[HORIZON.2.5.2 - Energy Supply](#)

## Topic(s)

[HORIZON-CL5-2023-D3-02-16 - Accelerating the green transition and energy access in Africa](#)

# Call for proposal

[HORIZON-CL5-2023-D3-02](#)

[See other projects for this call](#)

## Funding Scheme

[HORIZON-IA - HORIZON Innovation Actions](#)

## Coordinator



### UNIVERSITEIT TWENTE

Net EU contribution

€ 870 000,00

Address

**DRIENERLOLAAN 5**  
**7522 NB Enschede**

 **Netherlands** 

Region

**Oost-Nederland > Overijssel > Twente**

Activity type

**Higher or Secondary Education Establishments**

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 870 000,00

## Participants (12)




### UNIVERSITY OF THE WESTERN CAPE

 South Africa

Net EU contribution

€ 380 988,75

Address

**ROBERT SOBUKWE ROAD**  
**7535 Cape Town** 

Activity type

**Higher or Secondary Education Establishments**

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 380 988,75

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## UNIVERSITA DEGLI STUDI DI PADOVA

 Italy

Net EU contribution

€ 354 610,00

Address

**VIA 8 FEBBRAIO 2**  
**35122 Padova** 

Region

**Nord-Est > Veneto > Padova**

Activity type

**Higher or Secondary Education Establishments**

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 354 610,00

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## UNIVERSIDAD DE LLEIDA

 Spain

Net EU contribution

€ 298 125,00

Address

**Placa Victor Siurana 1 1**  
**25003 Lleida** 

Region

**Este > Catalunya > Lleida**

Activity type

**Higher or Secondary Education Establishments**

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 298 125,00



## **ARMENGOL & ROS CONSULTORS I ASSOCIATS SLP**

 Spain

Net EU contribution

€ 297 675,00

Address

**CALLE PAU CLARIS 97 1 2**  
**08009 Barcelona** 

SME 

**Yes**

Region

**Este > Catalunya > Barcelona**

Activity type

**Private for-profit entities (excluding Higher or Secondary Education Establishments)**

Links

[Contact the organisation](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 425 250,31



## GENIUS WATTER S.R.L.

Italy

Net EU contribution

**€ 876 575,00**

Address

**VIA POSTUMIA 9/B**  
**35010 BRENTA**

Region

**Nord-Est > Veneto > Padova**

Activity type

**Private for-profit entities (excluding Higher or Secondary Education Establishments)**

Links

[Contact the organisation](#)

[Participation in EU R&I programmes](#)

[HORIZON collaboration network](#)

Total cost

**€ 1 252 250,00**



## INSTITUT INTERNATIONAL DU FROID

France

Net EU contribution

**€ 249 867,50**

Address

**BOULEVARD MALESHERBES 177**  
**75017 Paris**

Region

**Ile-de-France > Ile-de-France > Paris**

Activity type

**Public bodies (excluding Research Organisations and Secondary or Higher Education Establishments)**

Links

[Contact the organisation](#) [Website](#)

[Participation in EU R&I programmes](#)


[HORIZON collaboration network](#)

Total cost  
**€ 249 867,50**

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## LIB PACK

 South Africa

Net EU contribution

**€ 51 887,50**

Address

**12 SUTTON ROAD FAIRWAYS WESTERN CAPE  
7941 CAPE TOWN** 

SME 

**Yes**

Activity type

**Private for-profit entities (excluding Higher or Secondary Education Establishments)**

Links

[Contact the organisation](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost  
**€ 74 125,00**

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## FLOMACK (PTY) LTD

 South Africa

Net EU contribution

**€ 475 498,63**

Address

**60 STUDY STREET FABRICIA  
8301 KIMBERLEY** 

Activity type

**Private for-profit entities (excluding Higher or Secondary Education Establishments)**

Links

[Contact the organisation](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 679 283,75

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## ECOWAS CENTRE FOR RENEWABLE ENERGY AND ENERGY EFFICIENCY

Cape Verde

Net EU contribution

€ 272 416,25

Address

ACHADA SANTO ANTONIO ELECTRA BUILDING 2ND FLOOR  
7602 PRAIA

Activity type

**Public bodies (excluding Research Organisations and Secondary or Higher Education Establishments)**

Links

[Contact the organisation](#)

[Participation in EU R&I programmes](#)

[HORIZON collaboration network](#)

Total cost

€ 272 416,25

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## GENIUS AGUA E ENRGIA CV SA

Cape Verde

Net EU contribution

€ 481 250,00

Address

FREGUESIA DE SANTA ISABEL CIDADE DE SA REI  
0000 BOA VISTA

Activity type

**Private for-profit entities (excluding Higher or Secondary Education Establishments)**

Links

[Contact the organisation](#)

[Participation in EU R&I programmes](#)

[HORIZON collaboration network](#)



Total cost  
**€ 687 500,00**

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## BLUE SKY RENEWABLE ENERGY (PTY) LTD

 South Africa

Net EU contribution

**€ 329 949,38**

Address

**UNIT C 45 DE WAAL ROAD DIEP RIVER  
7880 CAPE TOWN** 

Activity type

**Private for-profit entities (excluding Higher or Secondary Education Establishments)**

Links

[Contact the organisation](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost  
**€ 471 356,25**

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## MINISTERE DE L' AGRICULTURE ET DU GOUVERNEMENT

 Cameroon

Net EU contribution

**€ 60 550,00**

Address

**BOULEVARD 10 ANCIENNE PRESIDENCE  
237 YAOUNDE** 

Activity type

**Public bodies (excluding Research Organisations and Secondary or Higher Education Establishments)**

Links

[Contact the organisation](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost  
€ 80 625,00

**Last update:** 16 April 2024

**Permalink:** <https://cordis.europa.eu/project/id/101147102>

European Union, 2024

