Profile Status: Published

Technology Offer

Compact solar collector with linear Fresnel concentrator and triple movement.

Summary

A Spanish research group in renewable energies has patented a compact solar collector with a linear Fresnel concentrator and triple movement for collecting and concentrating solar energy over a heat transfer fluid, which carries it to where it can be used providing a new thermal and electrical technology for the building industry. Companies operating in the energy and building sectors are sought to develop applications of the described technology under license agreements.

Creation Date	31 January 2017
Last Update	23 February 2018
Expiration Date	02 August 2018
Reference	TOES20170131001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/ee0edab7-9916-42e9-b514-b7884cce8893

Details

Description

In 2014, 54% of the world's population lived in urban areas and collectively consumed 75% of the world's resources. By 2050, 66% of the world's population is expected to be urban, so it is essential to minimize energy consumption in the urban environment.

In the European Union, the building sector represents one of the largest consumers of energy. The EU therefore promotes a series of guidelines to encourage the use of energy alternatives for buildings.

There are several renewable energy systems that can be used in the building sector for the production of electricity and heat. Solar thermal and photovoltaic systems are currently the most widely used, especially in regions where annual solar radiation is high, as is the case in southern European countries.

However, in the configurations of such systems, the primary concentrator and the secondary concentrator lack movement, so a large area is needed for its implantation to be effective in solar uptake. In addition, because of their lack of movement, there is a loss of energy due to the fact that, during a large part of the solar capture period, the solar beams do not strike the ends of the absorber tube. In addition, such lack of movement causes the secondary concentrator to be arranged at a certain distance from the primary concentrator, which limits the installation of other concentrators.

Researchers at a Spanish university working in renewal energies have developed a compact solar collector with a linear Fresnel concentrator and triple movement, comprising a fixed structural system, a mobile structural system that can roll in the North-South direction pivoting with respect to a primary axis in the East-West direction, a primary concentrator system composed of a number of rows of mirrors that can flip in the East-West direction pivoting with respect to a reflector axis in the North-South direction and a secondary concentrator system that can roll in the direction North-South pivoting with respect to a secondary axis in the East-West direction. The secondary concentrator comprises an absorber tube(s) through which a heat transfer fluid flows and collects the energy projected by the mirrors and transports it.

The present invention is applicable in those sectors in which equipment for the generation of thermal energy from radiation is manufactured or used, such as in the building sector, where hot water, heating and/or cooling and electrical energy are simultaneously required. Due to its high efficiency, it is also applicable to water purification and desalination.

The researchers would like to reach license agreements with companies operating in the energy and building sectors to develop applications of the described technology.

The university is a public institution oriented to education, research and technology transfer. However, it is not one of its capacities or goals to manufacture industrial products or distribute them commercially. Therefore, the university seeks to sign a patent licence agreement for a company to manufacture and commercialize the above-described technology.

Advantages and Innovations

The present invention allows:
- to maximize the absorption of solar energy by the secondary concentrator system,
- to reduce the surface required for installation,
- to reduce the separation between several concentrators when installed together and to optimize their application in heating or cooling, since it allows to obtain more energy in the winter months than of the summer months, or vice versa.

It allows solar tracking over time in an optimal way and it can also concentrate solar radiation more efficiently thanks to the possibility of having a triple movement. This makes possible to produce very efficient equipment, but at the same time very compact. In addition, thanks to its flexibility of movement, the surface necessary for its installation is reduced, which is another important parameter in building applications, where the available space is usually circumscribed to the floor of the building.
Its configuration also allows all reflected sunbeams in the North-South direction to strike the absorber tube, regardless the time of day and day of the year, avoiding the energy losses at the tube end.

Stage of Development

Available for demonstration

IPR Status

Patent(s) applied for but not yet granted

Comment Regarding IPR status

Patent applied for in Spain.

Profile Origin

Private (in-house) research

Keywords

Technology

02006004	Installations related to construction (energy, lighting, …)
02009026	Energy supply system
04002	Energy production, transmission and conversion
04005005	Solar/Thermal energy

Market

06001004	Equipment and instrumentation
06003001	Solar/thermal energy
06010001	Energy for private/domestic housing
09007	Construction and Building Products

NACE

M.72.1	Research and experimental development on natural sciences and engineering
P.85.4.2	Tertiary education

Network Contact

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Open for EOI : Yes

Dissemination

Send to Sector Group

Intelligent Energy

Client

Type and Size of Organisation Behind the Profile

University

Year Established

0

Already Engaged in Trans-National Cooperation

Yes

Languages Spoken

English
Spanish

Client Country

Spain

Partner Sought

Type and Role of Partner Sought

Companies that operate in those sectors which manufacture or use equipment for the generation of solar thermal energy. For instance, suitable partners could be construction related companies for those projects which require at the same time electricity, hot water, heating and cooling. The high efficiency of this technology makes it also suitable for water purification and desalination.
Task to be performed: Applications of the described invention.

Type and Size of Partner Sought

SME 11-50,SME <10,>500 MNE,251-500,SME 51-250,>500

Type of Partnership Considered

License agreement

Attachments

Profile Status: Published

Technology Offer

A start up Bulgarian company offers partnership for the commercialization of a designed by them device, transforming the kinetic energy of cardio-fitness machines to electricity. The preferred cooperation types are financial or joint venture agreements.

Summary

This is a Bulgarian start-up company working on its first major project – a device for transformation of the kinetic energy from fitness machines to electricity. The company has developed its first prototype version and now is working on the second stage concerning the final optimization of the product and its commercialization. The sought cooperation types are financial, joint venture or technical cooperation agreements. Commercial agreement with technical assistance is also an option.

Creation Date	30 December 2016
Last Update	08 January 2018
Expiration Date	18 July 2018
Reference	TOBG20161229002
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/3994ff01-8d43-4989-98ee-85e33b87ad00

Details

Description

This newly founded Bulgarian company is working on the development of an innovative device that makes electricity from the kinetic energy of cardio-fitness machines. The research is based on the experience of proven specialists from the energy industry, the information technologies' industry, wellbeing and recreation, business development and entrepreneurship. The combination of the above mentioned experts' knowledge and experience brought to the development of a technologically improved solution to something that already exists. Technology, the team is working on, is an improvement from existing alternatives due to its new approach towards installation (making it more affordable), to its compatibility with various fitness machines, and mainly due to its distinguishing feature for individual recognition and feedback.

The concept comes not only as an addition to cardio training but would be developed in other industry markets as it is a statement for sustainable development from every gym and user. The information and individual contribution will be uploaded on social media platforms and phone

apps.

The main driving force behind the concept is to make the care for the environment a purposeful activity. The idea is to make the regular training sessions a remarkable event for every user by adding a “feel good” element by informing users how much they have relieved the environment from pollution through their personal actions.

The device under development is designed for functionality. It will be functional from an installation perspective, making it more affordable for every new installation in the same facility (gym). The goal is to make the investment for one fitness machine equipped with the device and the investment for ten (in the same facility) as much as possible closer.

Example: 1 installation costs X €, and for 10 you will pay 3X to 4X €, instead of paying 10X €. It is important to be noted that the company is working hard towards having the initial price (X) lower than the price of the competitive devices.

The further improvement of the device is directed towards its compatibility to a wide range of machines (more than any of the existing alternatives on the world market). As a final touch, the company decided to make the device fun to use and to develop personal recognition feature.

The development of the device so far has costed € 50 000. Calculations suggest that further € 100 000 would be necessary for the final product development, where all details would be performed with precision and all requirements to manufacturing will be specified. For setting it as a market-ready device are needed additional € 100 000. The time span of the product development will take from 18 to 24 months. Marketing team has calculated that it will take three years for the investors to recover their initial investment and start generating profit.

The envisaged primary types of partnership are financial agreement and joint venture agreement. The potential partners are expected to estimate the prospects for commercialization of the device and the needed funds and if convinced that the project is profitable, to invest in it. Commercial agreement with technical assistance for acquisition of the company or part of it also is an option.

For additional development of the project, aiming at the application of the device in other industrial sectors, a technical cooperation agreement is sought.

Advantages and Innovations

- The device contributes for protection of the environment while the people perform their casual sports activities;
- The device is designed to be functional with different kinds of fitness equipment. It can be applied also in other types of machines and equipment;
- The company has achieved decrease of the expenditures for installing several devices in one facility (gym);
- The company’s team includes experts in different branches – energy, information technologies, wellbeing and recreation, business development and entrepreneurship. This allows it not only to design an innovative product, but also helps for its further development and adaptation for other devices.

Stage of Development

Prototype available for demonstration

IPR Status

Patent(s) applied for but not yet granted

Comment Regarding IPR status

Applied for national patent. Application for European patent is being currently prepared for submission.

Profile Origin

Private (in-house) research

Keywords

Technology

01002004	Embedded Systems and Real Time Systems
11008	Creative services

Market

07001004	Sporting goods, hobby equipment and athletics clothes

NACE

R.93.1.3	Fitness facilities

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Open for EOI : Yes

Dissemination

Send to Sector Group

Environment

Client

Type and Size of Organisation Behind the Profile

Industry SME <= 10

Year Established

2015

Already Engaged in Trans-National Cooperation

No.

Languages Spoken

English
Bulgarian

Client Country

Bulgaria

Partner Sought

Type and Role of Partner Sought

Joint venture agreement - a potential partnership with a company in the sphere of software/mobile apps development could prove highly beneficial to both parties. If such partnership is agreed upon and the software/mobile app development phase is outsourced to the potential partner, then the company's team would be fully capable to develop the rest of the device, and perform all necessary tests for additional € 50 000.

Financial agreement - at the stage the company has reached, it needs € 200 000 for finalizing the product development and set it as a market-ready device. This sum is expected to be granted by the potential partner.

Commercial agreement with technical assistance – if a potential partner is interested in acquisition of the company or part of it, the expected price is € 500 000 for the whole company (including the patent, now-how, expertise and technical assistance) or € 200 000 for 30% of it.

Technical cooperation agreement – the concept of the developed innovative device (full concept is a trade secret) suggests its use in many other spheres of the industry and services. Every technology company that is interested in the device and has ideas for its application in a particular machine or equipment is welcome as a partner.

Type of Partnership Considered

Financial agreement
Commercial agreement with technical assistance
Technical cooperation agreement
Joint venture agreement

Attachments

Profile Status: Published

Technology Request

Reversed osmosis technology driven by renewable energy

Summary

A Dutch governmental organisation is looking for a proven reversed osmosis technology driven by renewable sources for application in the Caribbean territories of the Netherlands. The organisation is looking for technology options for a feasibility study for application of the technology for irrigation and cattle water production. Based on the results of this study, and selection of the technology (supplier) a commercial agreement with technical assistance is strived for.

Creation Date	14 September 2017
Last Update	18 September 2017
Expiration Date	18 September 2018
Reference	TRNL20170914001
Public Link	https://een.ec.europa.eu/tools/services/PRO/Profile/Detail/ba0ac1b6-8d21-4c05-99f3-13e64876df4f

Details

Description

The Dutch governmental organisation is supporting a project that aims to support enterprises and local government in the Caribbean municipalities (Bonaire, Saba, Statia).
One of the focal subjects is agriculture development which is highly dependent on the availability of (potable) water.

Problem addressed:
Water production on the island of Bonaire relies for almost 100% on fossil fuels and is taking about 20% of the total energy demand. Several (rural agriculture) areas on the island have no connection with the electricity and water grid. Water has therefore to be supplied by truck which effects the costs and supply security. Changing water prices (due to regulation) are likely to drive the cost for water to an higher level. This inhibits the development of agriculture in these specific areas. Therefore alternative options for water collection and (decentralised) production are being sought.

Technology requested for this project:
Reversed osmosis unit for (potable) water production, based on sea or brackish water, driven with renewable sources.

Main features:
- Small scale (10-100 m3/day)
- Stand alone (of grid)

- Proven technology
- Low maintenance

Application fields:
Application for (potable) water production for agriculture purposes (irrigation and cattle) in rural area near or nearby the coast line.

The Dutch governmental organisation is looking for an SME in the field of small scale, (potable), water production. Specialised in the design and production of reversed osmosis technology water production units driven by renewable sources and/or with expertise in rural (off grid) operation.
The potential partner should provide input for a feasibility study. After selection the partner will provide technical service and assistance for (local) operation.

Technical Specification or Expertise Sought

Reversed osmosis unit for (potable) water production, based on sea or brackish water, driven with renewable sources.

- Small scale (10-100 m3/day)
- Stand alone (of grid)
- Proven technology
- Low maintenance

Stage of Development

Already on the market

Keywords

Technology

04005	Renewable Sources of Energy
10004	Water Management
10004008	Water Resources Management

Market

06003008	Other alternative energy
08004003	Water treatment equipment and waste disposal systems
09008002	Water, sewerage, chemical and solid waste treatment plants

NACE

O.84.1.3	Regulation of and contribution to more efficient operation of businesses

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Open for EOI : Yes

Dissemination

Send to Sector Group

Environment

Client

Type and Size of Organisation Behind the Profile

Other

Year Established

0

Already Engaged in Trans-National Cooperation

No.

Languages Spoken

English
Dutch

Client Country

Netherlands

Partner Sought

Type and Role of Partner Sought

The Dutch governmental organisation is looking for a SME in the field of (small scale), (potable) water production, specialised in the design and production of reversed osmosis technology water production units driven by renewable sources.

Role and tasks to be performed are:
- Offering (technical) input for feasibility study
- Make commercial offer(s) for local client or organisation
- When selected: design, production, start-up and of water production facility and ‘training’ of local client for operation.

Type and Size of Partner Sought

SME 11-50,SME <10,SME 51-250

Type of Partnership Considered

Commercial agreement with technical assistance

Attachments