

ARDOR
PRIME

SOLID FUEL CONTINUOUS COMBUSTION THERMOGENERATORS

PRESENTATION OF THE PROJECT

PARTICIPANTS

SERGBUN DESIGN AND ENGINEERING BUREAU
ARDORPRIME COMPANY

ArdorPrime company is engaged in implementing and developing of innovative products and new technologies. The production is currently carried out in Asia but we also have representatives in the USA, Russia and Latin America.

The project is being put into effect with the help of experienced specialists in different areas: engineering, management, finance, promotion and PR. All the participants boast a vast experience in implementing of startups in different countries of the world.

1

SPECIALIZATION OF THE PROJECT

Energy saving technologies

2

CURRENT STATUS OF THE PROJECT

The prototype of solid fuel continuous combustion thermogenerator has been manufactured, the tests are under way, certification of intellectual property is started, negotiations with Cambodia government on mutually beneficial collaboration are in effect.

3 PROTOTYPES PRODUCED

Types of sizes: 40x40x85cm, 50x50x50x85cm, 60x60x85cm

ARDORPRIME PROJECT DESCRIPTION



Research and development of the thermogenerator prototype and the equipment on its base. Licensing in Cambodia, the USA, Singapore and other countries. Elaboration of research and design documentation for thermogenerators and the equipment on their base. An order of component parts in China and Vietnam, establishment of an assembly factory in Cambodia. Application for crowdfunding. Elaboration of new assembly units: broadening and improvement of the models. Selling of licenses for manufacturing of thermogeneratos, furnaces, boilers and drying apparatus.

| PRODUCT AND MARKET OUTLETS

Domestic and industrial equipment based on solid fuel thermogenerators

Function of the equipment based on thermogenerators:

Heating of country houses, chalets, trailers, remoted mobile centers, production plants, objects under construction, electrogeneration for domestic purposes, heating systems, drying aparatus, water heating boilers, bread furnaces, smoke houses, furnaces for restaurants

Market outlets:

Agriculture, construction, transport companies, army, the Ministry of Emergency Situations, food production, hotel industry, household

A broad-scale implementation of these thermogenerators can considerably reduce greenhouse gas emissions

WHY NOW?

Why is the market ready?

These thermogenerators are easily installed in the existing technological chains and can be manufactured on the same equipment which is used by the factories currently producing furnaces of old models, and they can substitute ordinary furnaces in this equipment.

Solid fuel thermogenerators provide 5-7 times lower fuel consumption, increase competitiveness of businesses using thermoenergy (drying of agricultural products, fish, meat products, grain, wood etc)

Sellers of equipment, specialized shops and market chains are interested in articles in high demand.

Why right now?

Climate changes

Rising of prices on energy supplies

Environmental deterioration due to greenhouse gases

Stricter safety requirements

More frequent military confrontations and man-induced industrial disasters make easily-maintained and economical furnaces an important factor for survival.

Business idea

Manufacturing and selling of a new type of thermogenerators and equipment on their base, selling of licenses for production of current and future models – an active work on broadening a list of models continues.

Licensing of objects of intellectual property, insurance of such onjects in the regions and countries with prospective markets (Southeast Asia, the USA, Canada, Russia, Western Europe, Argentina, Brazil, India, China)

The company supervises all the stages from an idea to selling of the final product outsourcing standard operations not relating to its product and area of knowledge.

PROTOTYPE 1

Intended Purpose

WATER HEATING FOR BOILERS, SWIMMING POOLS, SAUNAS AND TECHNOLOGICAL NECESSITIES

CAPACITY: CAPACITY RANGE
FROM 5 kWh TO 120 kWh

MAXIMUM WATER TEMPERATURE +95 C

CONTINUOUS NON-STOP FUEL CHARGING
AND ASH ELEMINATION

FUEL: CHARCOAL, BITUMINOUS COAL,
FIREWOOD, PELLETS

TIME OF WORK FROM ONE IGNITION: -
CONTINUOUS

COMPLETE CHARGING FUEL MASS:
CHARCOAL – 30KG. BITUMINOUS COAL –
120KG

TIME BETWEEN NEW FUEL CHARGING:
CHARCOAL: 70 kWh- 12 h.; 120kWh - 6 h..
BITUMINOUS COAL: 70 kWh - 48 h.; 120kWh - 18 h.

ECOFRIENDLINESS IN TERMS OF EMISSIONS-
SURPASSES ANALOGUES IN 4-5 TIMES

NO EMISSIONS OF PYROLYSIS LIQUID

SIZE (LXBXH):
600*600*850 MM

FUEL: FIREWOOD, PELLETS, BITUMINOUS COAL,
CHARCOAL, SUGAR CANE MILLCAKE

PROTOTYPE 2

Intended Purpose

Air heating for drying apparatuses, ovens, bakeries

AIR PRODUCTION CAPACITY
(+250 C°): 1100M3/HOUR

NOMINAL AIR TEMPERATURE: + 250
C°.

TIME OF WORK FROM ONE IGNITION: -
CONTINUOUS

COMPLETE CHARGING FUEL MASS:
CHARCOAL – 30KG. BITUMINOUS
COAL – 120KG

CAPACITY:
CAPACTIY RANGE
FROM 5 kWh TO 120 kWh.

ECOFRIENDLINESS IN TERMS OF
EMISSIONS SURPASSES ANALOGUES
IN 4-5 TIMES

NO EMISSIONS OF PYROLYSIS LIQUID

NO NEED FOR MAINTENANCE DURING
COMBUSTION. FUEL CHARGING AND ASH
ELIMINATION IS CARRIED OUT DURING
FUNCTIONING

SIZE(LXBXH): 600 X 600 X 850 MM.
THERMALLY INSULATED STRUCTURE
MASS WITHOUT FIXTURES: 110 KG.

FUEL: CHARCOAL, BITUMINOUS COAL,
FIRE WOOD, CANE, PELLETS, INDUSTRIAL
WOOD RESIDUE

PROTOTYPE 3

Intended purpose

Steam production for steam-generators, bath-houses, saunas, technical purposes

	HEATING WATER VOLUME (IN BOILER MODE): UP TO 5M3/ HOUR	
FUEL: CHARCOAL, BITUMINOUS COAL, FIRE WOOD, PELLETS, RESIDUE	TIME OF WORK FROM ONE IGNITION: - CONTINUOUS	COMPLETE CHARGING FUEL MASS: CHARCOAL – 15KG. BITUMINOUS COAL – 60KG
TIME BETWEEN NEW FUEL CHARGING: CHARCOAL: 25 kWh- 24 h.; 50kWh - 12 h.. BITUMINOUS COAL: 25 kWh - 60 h.; 50kWh - 30 h.	ECOFRIENDLINESS IN TERMS OF EMISSIONS SURPASSES ANALOGUES IN 4-5 TIMES	NO EMISSIONS OF PYROLYSIS LIQUID
MAXIMUM STEAM TEMPERATURE +300 C	SIZE (LXBXH) 450*500*850 MM. THERMALLY INSULATED STRUCTURE MASS 70KG.	

SOLID FUEL THERMOGENERATORS
UNIVERSAL USE

COUNTRIES WITH COLD
CLIMATE

HEATING
WATER HEATING BOILERS
DRYING APPARATUSES
FURNACES FOR BATH HOUSES AND SAUNAS
FURNACES FOR FOOD PRODUCTION,
BREAD BAKERY
HEATERS
STEAM GENERATORS

SOLID FUEL
THERMOGENERATORS

COUNTRIES WITH HOT
CLIMATE

HEATING
FURNACES FOR FOOD PRODUCTION,
BREAD BAKERY,
WATER HEATING BOILERS,
DRYING APPARATUSES,
FURNACES FOR BATH HOUSES AND
SAUNAS,
STEAM GENERATORS

Competitive advantages

COMBINATION OF PRICE-QUALITY-FEATURES MAKE
A NEW TYPE OF THERMOGENERATORS ABSOLUTELY NEW PRODUCT

CHEAP
TO MANUFACTURE



NO STEAM
REDUCTION OF
CO₂
EMISSIONS
FOR 90%



PROVIDE
5-7 TIMES LESS
FUEL
COMSUMPTION



EASY TO MAINTAIN
CONTINUOUS
COMBUSTION



WORK WITH
ALL KINDS OF
SOLID FUEL

Competitive advantages

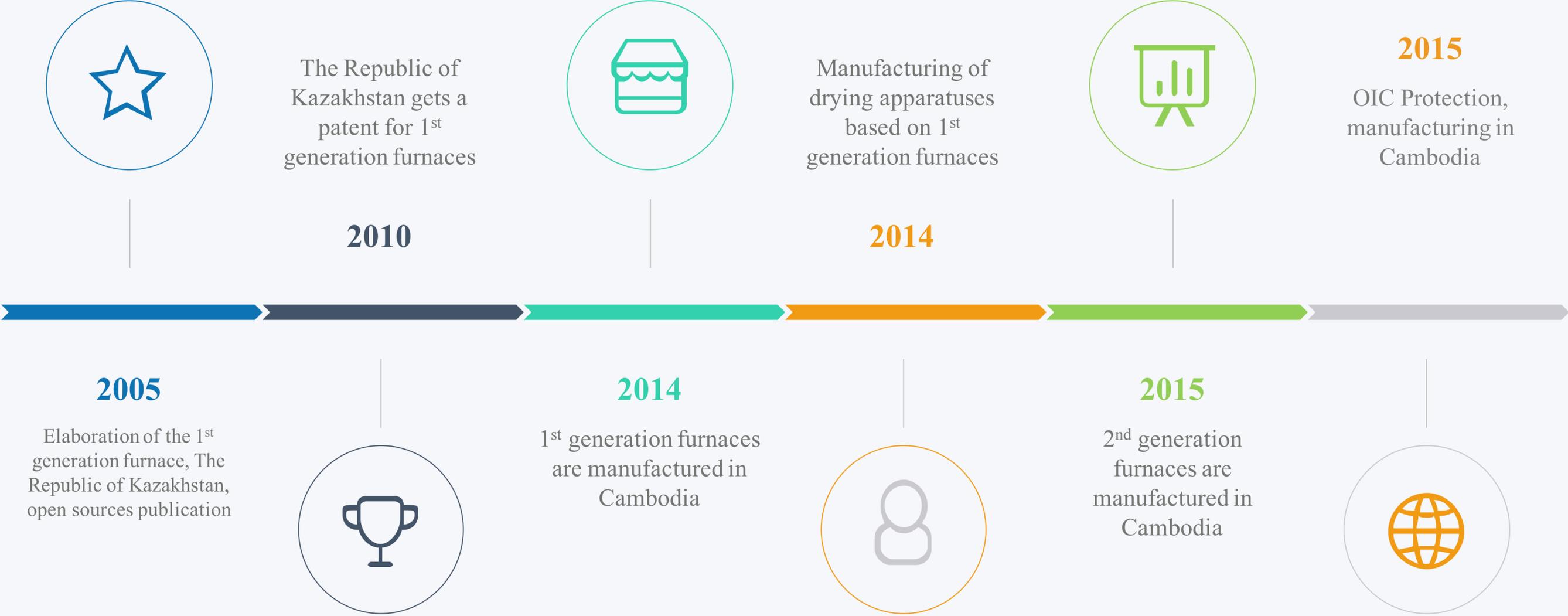
1 kW/hour - \$ 0,01

cost

up to 7 times

less fuel used

PROJECT HISTORY



Comparison with existing sustained combustion furnaces

Ordinary sustained combustion furnaces have a number of disadvantages:

Formation of much condensates in a tube due to low temperature of outlet gases

High price

Material intensity of use

Fire hazards

Incomplete combustion of fuel

Continuous combustion thermogenerators:

Time of combustion after one charging is 3-4 times higher

Fuel consumption rate for 1 kW production is 5-7 times lower

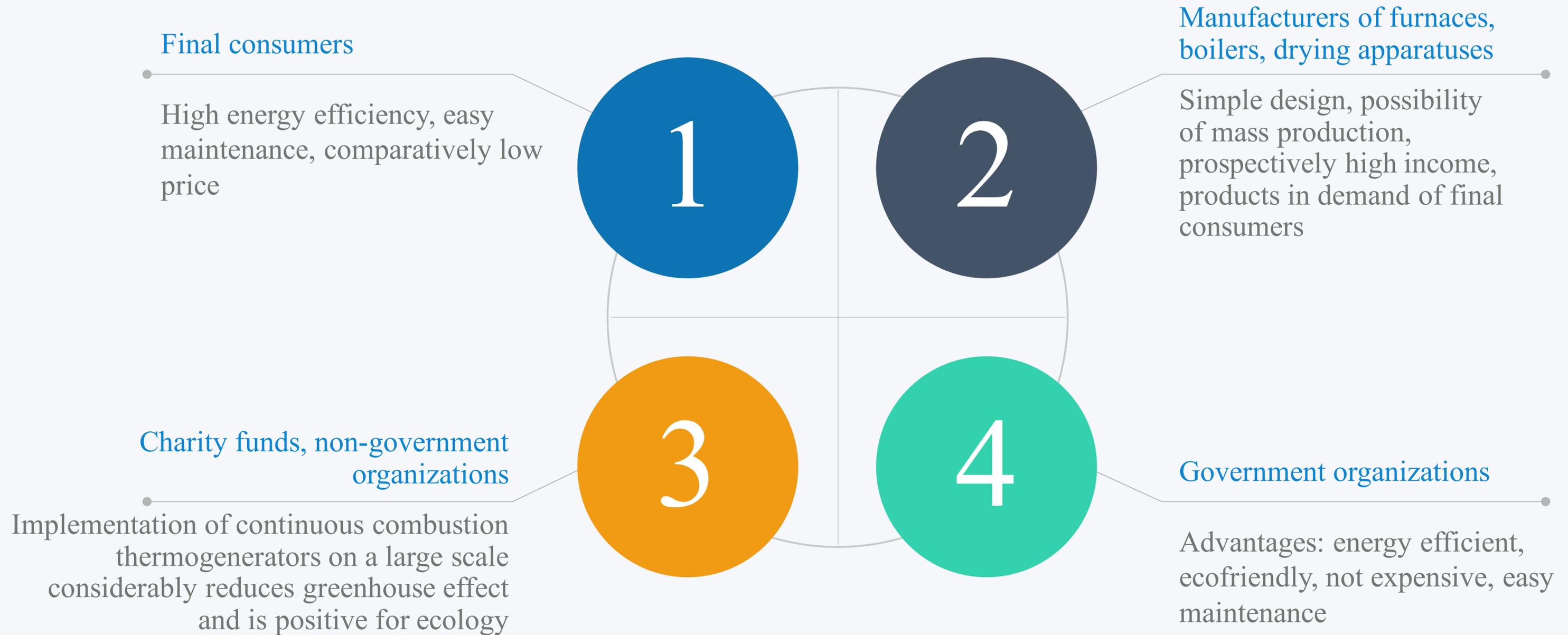
Furnace tubes less than 1 m can be used

Complete combustion of fuel

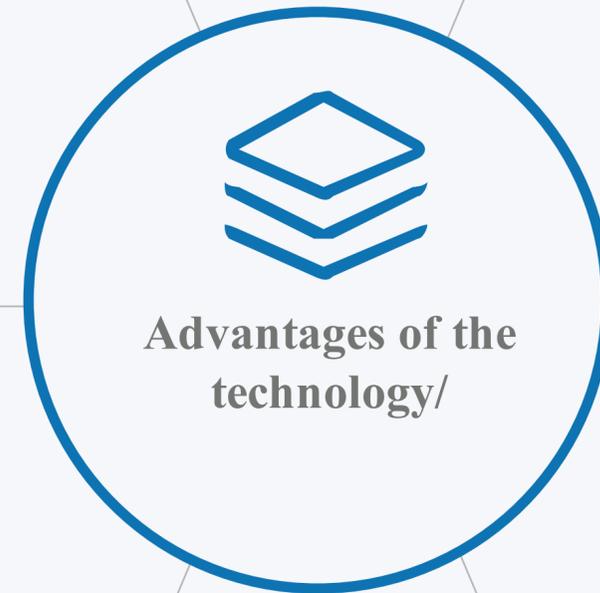
Description of the market of analogous decisions

Improvement of traditional solid fuel furnaces is developing in several directions. Because of convective (double) body heat-transfer coefficient is rising. Because of limitation of air, a pyrolysis combustion is guaranteed providing improvement of efficiency factor up to 80% and more. Low temperature pyrolysis provides long combustion and increases energy-efficiency of fuel combustion. The same effect is produced under high temperature pyrolysis.

Demand analysis (buyers of the product and technologies)



Competitiveness analysis and advantages of the technology/product



Absolute absence of emitted ash particles

Almost absolute absence of CO₂ in emissions

No fire hazard at all

Provides continuous non-stop combustion after one charging during 48 hours

Low temperature of emitted gases

Possibility of maintaining the temperature set

Absence of condensates

Multi-thermo capacity

Quickly reaches high temperatures

Possibility of fuel combustion with medium or low temperature pyrolysis

Fuel charging and ash elimination is carried out in a non-stop function mode of the furnace

No necessity in high furnace tubes

Technology. Description of the technology

Fuel is burnt down in 2 stages. At first output gases of heated fuel are burnt (directly in a combustion zone) and partial cracking is effected (firewood turns into charcoal during this process) and only then coke obtained is burnt guaranteeing phenomenal efficiency rates and complete combustion. The design of the furnace is unique so that it cannot be considered “gas generating” long combustion furnace, because there is only one zone of combustion where both fuel and output gases are burnt down.

Characteristics of the product

Solid fuel continuous combustion thermogenerators functioning with charcoal and bituminous coal, pellets, firewood, peat, sugar cane mill cake. A fuel combustion zone is in the downpart and thanks to know-how all fuel charge is certain to be completely burnt down. The product is unique in terms of its consumer-related features and value for price. They are reliable, long-lasting, easy in use and manufacturing. Ash elimination and fuel charging are carried out in a non-stop functioning mode.

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Market strategy



The market strategy is targeted not so much at the production as at selling of the licenses and attraction of and participation of new manufacturers



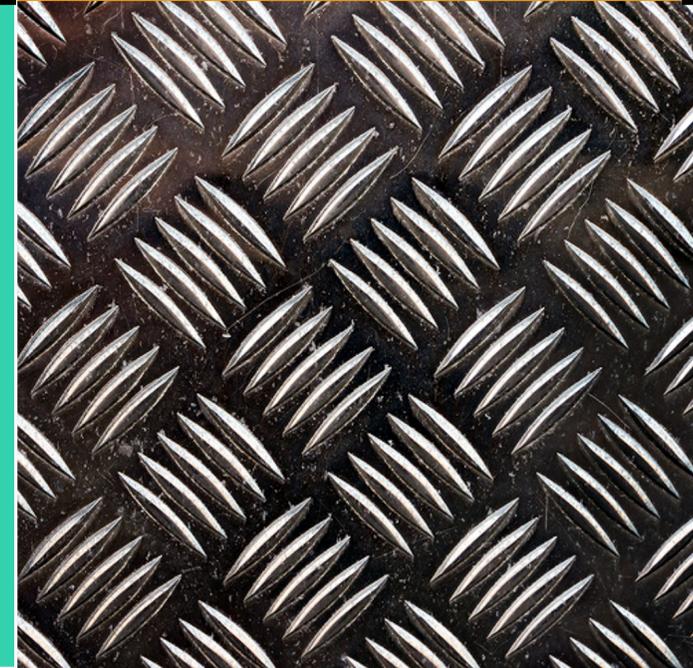
Search of new areas of usage of high temperature thermogenerators



Selling of licenses to manufacturers for production of 2nd generation furnaces and equipment on their base (boilers, drying apparatuses)



Organization of crowdfunding campaigns on the largest world platforms (indiegogo.com, kickstarter.com)



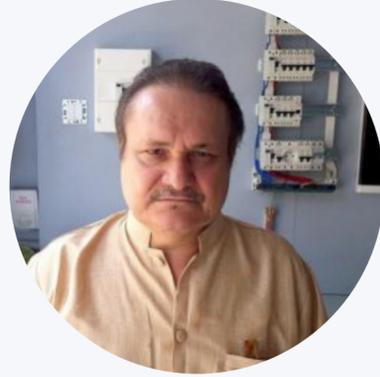
Small-scale manufacturing in Cambodia

ARDORPRIME
Project Team



Buni Heng

Chief manager of the project



Sergei Lachinyan

Chief designer and developer



Ivan Rezaev

Commercial director



Ivan Yanushkevich

Communications



Timofey Khrilev

Industrial design, advertisement and PR manager



Natalia Posadova

Financial director

ARDORPRIME

Key objects of intellectual property



РЕСПУБЛИКА КАЗАХСТАН

(19) KZ (13) U (11) 963
(51) F24H 1/24 (2012.01)

КОМИТЕТ ПО ПРАВАМ
ИНТЕЛЛЕКТУАЛЬНОЙ СОБСТВЕННОСТИ
МИНИСТЕРСТВА ЮСТИЦИИ РЕСПУБЛИКИ КАЗАХСТАН

ОПИСАНИЕ ПОЛЕЗНОЙ МОДЕЛИ К ПАТЕНТУ

(21) 2012/099.2
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(45) 14.06.2013, бюл. №6

(76) Близник Ярослав Михайлович (UA)

(74) Жаркынбаева Шолпан Сабыровна

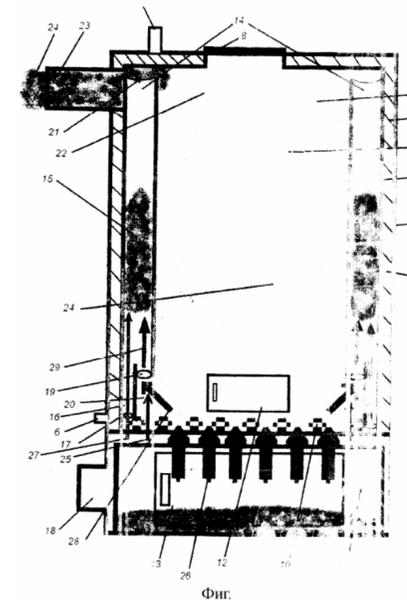
(56) Антикризисное тепло от ООО «Новокузнецкий котельный завод» // Стройка, 2009, №9, с.244

(54) **ТВЕРДОТӨПЛИВНЫЙ КОТЕЛ С ВЕРХДЛИТЕЛЬНОГО ГОРЕНИЯ "ЭНЕРГИЯ ТТ"**

(57) Твердотопливный котел сверхдлительного горения «Энергия ТТ» относится к отопительной технике, а именно к теплообменным агрегатам, работающим на твердом топливе, которые могут быть использованы для отопления жилых и других помещений, а также для горячего водоснабжения. В основу полезной модели поставлена задача в известной конструкции твердотопливного котла

повышения эффективности сжигания топлива и, соответственно, коэффициента полезного действия котла, при одновременном увеличении продолжительности горения одной загрузки топлива за счет применения в конструкции котла газоходов с эжекционными каналами. Поставленная задача достигается тем, что в твердотопливном котле, содержащем корпус, состоящий из внешнего и внутреннего баков теплообменника, пространство между которыми заполнено теплоносителем и в последнем из которых расположены загрузочное отверстие, печь с колосниковой решеткой и зольник, во внутреннем баке установлен хотя бы один газоход, заборная часть которого соединена через отверстие с воздухозаборником и через эжекционный канал с нижней частью печи, а выходная часть выведена в верхнюю часть печи.

(19) KZ (13) U (11) 963



Верстка А. Сарсекеева
Корректор П. Малеева

Patent --- <http://kzpatents.com/4-u963-tverdotoplivnyjj-kotel-sverhdlitelnogo-goreniya-energiya-tt.html>

Financing required:

1 stage - \$300 thousand dollars (patent licensing, closing of contracts with manufacturers of fixtures and establishment of an assembly plant, advertisement of the company for crowdfunding)

2 stage - \$150 thousand (buying of materials for production of the fixtures and equipment, payment of the manufacturing and installation works)

First income from the buyers is to be expected probably as soon as in 3 months after starting the financing.
The period of a complete pay back of investments: 1 year

Income resources of the project:

- selling of final products to wholesale companies and final consumers
- selling of patents and technologies to other countries

If fixtures manufacturing is well organized in China and assembling is carried out successfully in Cambodia, the income norm is:

- 100% for wholesale
- 200% for retail sale

Size of thermogenerator: 60x60x85 cm. Capacity 120 kW

Cost of small-scale manufacturing of a thermogenerator in Cambodia \$450

Wholesale price – not offered

Retail price- \$3500 (manufacturing is functioning and there are current orders)

Cost of a batch manufacturing of a thermogenerator \$300-350

Quantity 5000

Approximate wholesale price of a unit \$850

Retail price of a unit \$1550

CONTACT US

Keep in touch with us



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