TechnoKontrol™

ECOLOGICAL PORTABLE RECYCLING PLANT
TK-METEOR 4000/6000

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The authority on fire, electrical, and building safety

INDEX

ECOLOGICAL PORTABLE RECYCLING PLANT

TK-METEOR 4000/6000

TK-METEOR 4000/6000

CRUDE OIL, BURNT OILS/FATS CONTAMINATED, ENVIRONMENTAL RECYCLING RUBBER TYRE/PLASTIC ECOLOGICAL PORTABLE PLANT WITH FUEL REFINERY & SHREDDER TECHNOLOGY

Meteor 6000 - Portable recycling plant for the generation of biodiesel, fuels and electricity by recycling of crude oils, burnt fats & oils, contaminated land-environments due to oil spills, tyres and/or plastics through closed loop production technology and production systems.


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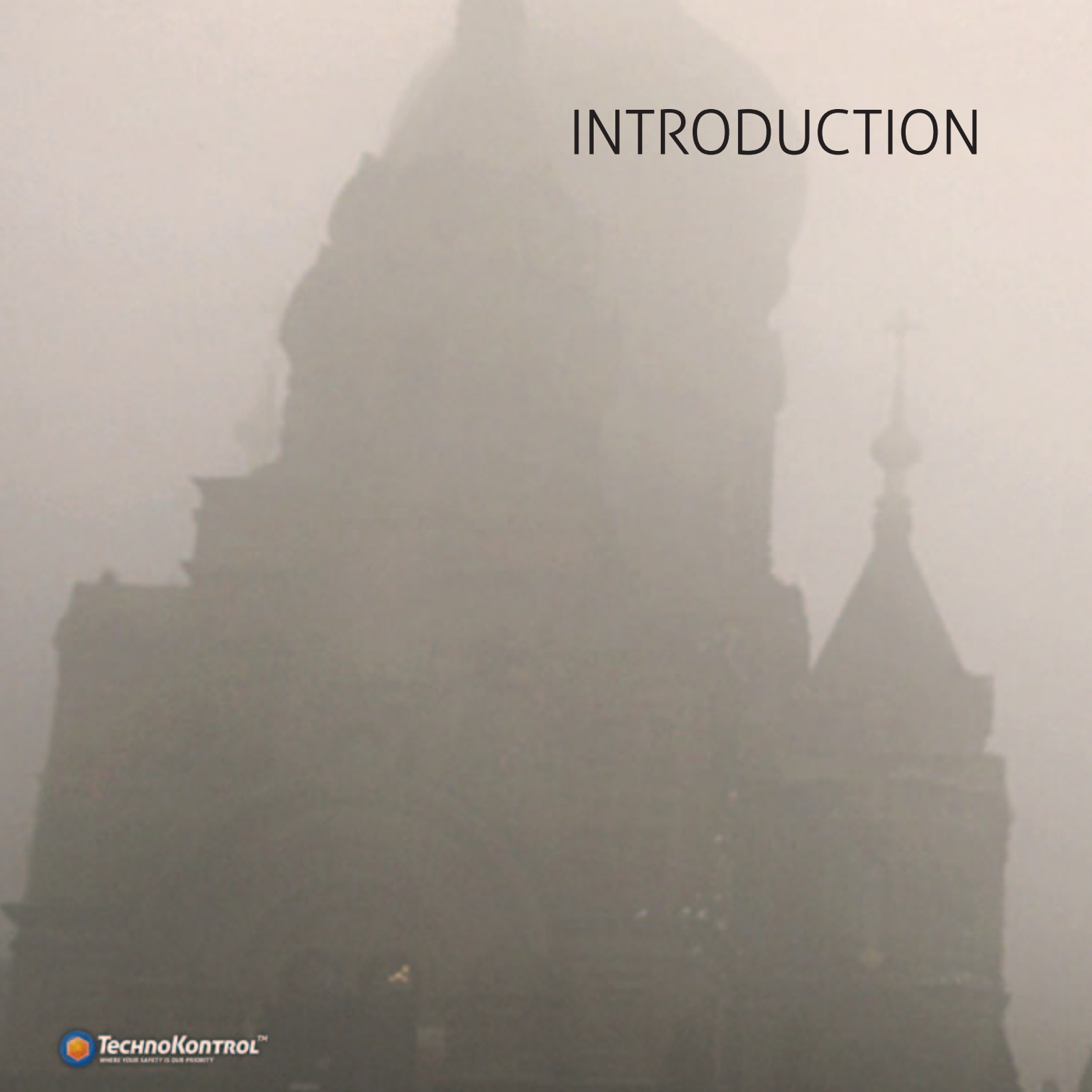
Main features:
Technical data:

INTRODUCTION



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Technokontrol R&D is committed decisively to the protection and long term prevention to damage our global environment due to bad industrial practices. Due to this reason Technokontrol has developed our unique TK-Meteor 4000/6000 Crude Oil, burnt oils/fats, contaminated land-environmental, rubber tyres & plastics ecological friendly recycling plants using our own R&D teams to create our own environmentally technological recycling plants to be at the forefront for the protection of the global environment.

Thus creating a cleaner energy bases using our never ending global stockpile of inorganic waste as plastics and rubbers, thus contributing to the improvement and safeguarding of the environment, social conditions and contamination of our water supplies for our future generations regardless of political, national, educational or economic boundaries.

1000 kg
USED RUBBER TYRES

450 kg
FUELS

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TK-METEOR 4000/6000

350 kg
BLACK CARBON POWDER

130 kg
STEEL/METALS

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The benefits can´t only be seen as directly financially beneficial for the user which takes into account the income generated from the sale of produced biodiesel, electricity, steel, copper, recycled tyres, carbon credits, grants and tar for example, but also environmentally rewarding socially, logistically and politically by reducing the massive storage of inorganic waste in legal & illegal landfills around the world.

Rubber is difficult to recycle due to the procedure known as "vulcanization," which it undergoes to attain its springy, flexible nature. Vulcanization is a curing process that involves adding sulfur to rubber, which creates stronger bonds between the rubber polymers. Due to the vulcanization method, tyres are difficult to melt for reuse and are therefore typically broken down by a mechanical process.

Plastics when compared to other materials like glass and metal, plastic polymers require greater processing (heat treating, thermal depolymerization and monomer recycling) to be recycled. Due to the high molecular weight of their large polymer chains, plastics have a low entropy of mixing.

A macro molecule interacts with its environment along its entire length, so total energy involved in mixing it is large compared to that of an organic molecule with a similar structure.

Landfill disposal Environmental Issues: Tyres are not desired at landfills, due to their large volumes and 75% void space, which quickly consumes valuable space. Tyres can trap methane gases, causing

them to become buoyant, or bubble to the surface. This 'bubbling' effect can damage landfill liners that have been installed to help keep landfill contaminants from polluting local surface and ground water.

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ENVIRONMENTAL OIL SPILLS, PETRO-CHEMICAL DAMAGE
RECYCLING & THE PRODUCTION OF DIESEL FUEL FROM
WASTE LAND ENVIRONMENTAL DAMAGE.

TECHNOLOGICAL

- Pyrolytic Oven
- Capacity of 3000 kg / day of crude oils, waste tyres or plastic compact.
- Stainless steel, ceramic and fiber thermal protective materials
- Technokontrol Heat resistant protection panels & materials
- Electric heating system by conduction and / or convection.
- Cylindrical metal tank for raw material plant feeding systems
- Collection system of black carbon / coal produced in the process

CHARACTERISTICS

Deposits Thermal Control Systems

- System to control the temperature once decomposed pneumatic or plastics left over produced powders, gases and others.

Separation Tank with Filtering of Harmful Gases

- Inner piping systems to filter & to separate gases, biodiesel, oils, etc.
- Process repeated 4 times.

Tank Gas Purification Systems

- System which is used to purify the gases produced during the process.

TECHNOLOGICAL CHARACTERISTICS

Oil Storage Tank

- Storage of crude produced with output for external filling deposits. The tank has a capacity of 3,000 liters (modifiable to larger amounts).

Technokontrol Anti-Explosion Fuel tanks

- Anti-explosion technology fuel tanks against terrorism /sabotage/ accidents.

Technokontrol Anti-Slosh fuel Tanks

- Easy transportable of loaded fuel tanks to and off vessels/transports which inside liquids fuels will not "slosh" especially important for on ship recycling barrages or ships.

Technokontrol Anti-Heat/Fire Protection Safety Panels

- In the event of fire/heat these panels can resist up to 1600°c for up to three hours which will protect fuel deposits and machinery in fires.

Refinery Plant & Technology (Inclusive)

- Refinery plant for oil refinering to obtain mainly crude but adaptable to produce diesel, gasoline, kerosene or light/heavy oils. (Oil Cracking technology)

Tyres and Plastic Crusher / Shredder Machinery

- Machine used to chop the residue before being fed into the process.

Motors, valves, and other operational parts and spares

TRANSPORT & LOGISTICAL OPTIONS

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When designing the plant we took into account its portability. There is an option to place the entire system into shipping containers 40 "foot to optimize transport by rail, land, sea or air.


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PLANT RAW MATERIAL FEEDING REQUIREMENTS

Material requirements for the TK-Meteor 4000/6000 to function optimally are:

- 3000 kg of crushed material (tyre or plastic)
- Compacted densities between 640 and 840 kg/m3

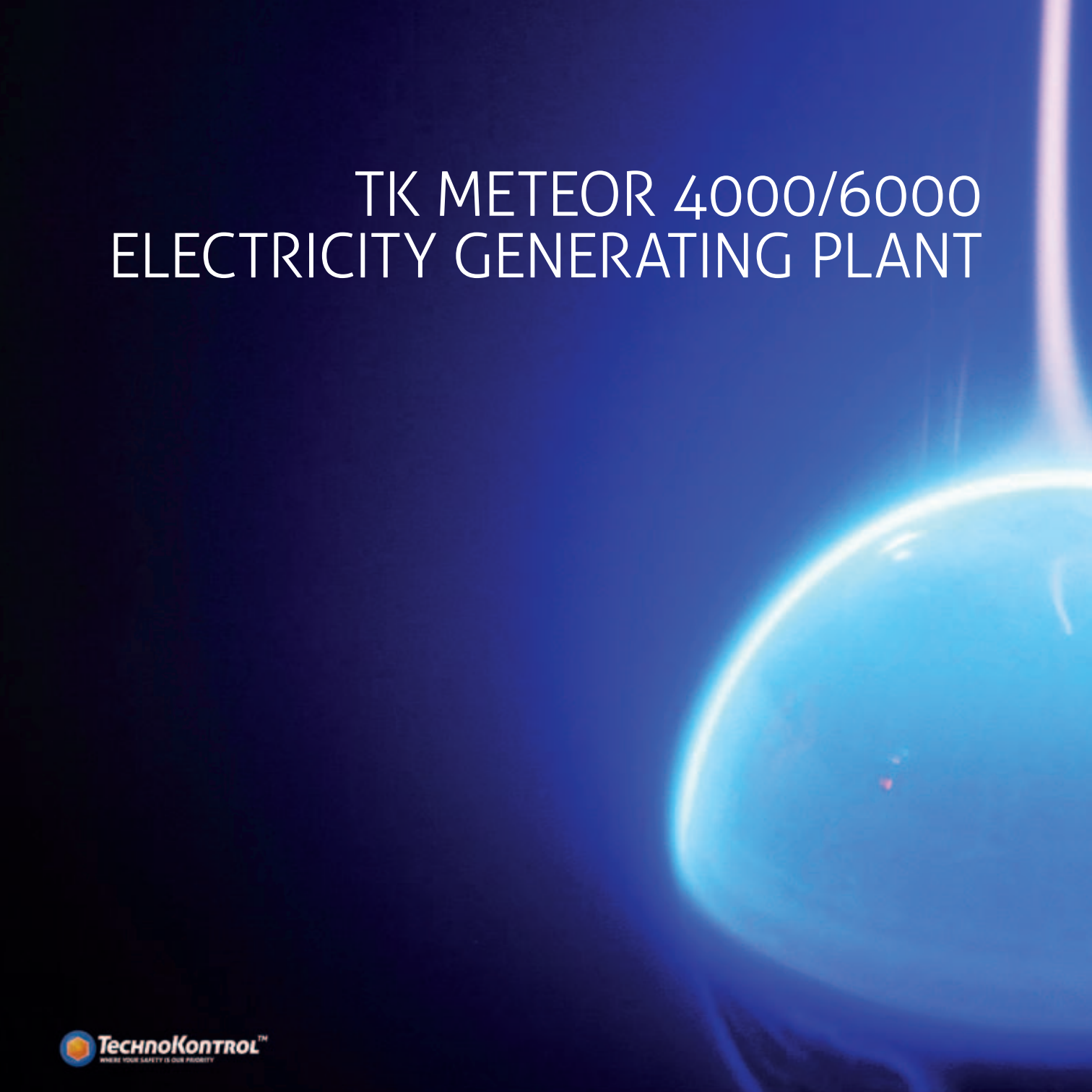
The TK-Meteor 4000/6000 recycling plant needs its own shredder machinery which we include in the package to prepare the raw material before being placed into the oven. Thus avoiding loss of production time and financial purchasing, shipping, imports, logistical costs to obtain these raw materials as plastics/rubber tyres at least financially with at least no purchase costs to the user, but also possibly receiving a financial income as grants/payments especially in Europe for recycling these types of highly contaminating inorganic waste types.

This manufacturing process needs at least 4 tanks of shredded/crushed raw material to have prepared to avoid production stoppages. In the event of not having a crusher/shredder operational at any time due to servicing or repairs, there must be at least 18 tons of grinding/shreddered stock ready for immediate use at the plant.


APPROX

In the refining of crude oil we include our own TK-refinery plant where you can produce one's own fuels such as crude, diesel, gasoline, kerosene stoves/light oils and heavy oils for commercial or industrial use.

TK METEOR 4000/6000 ELECTRICITY GENERATING PLANT



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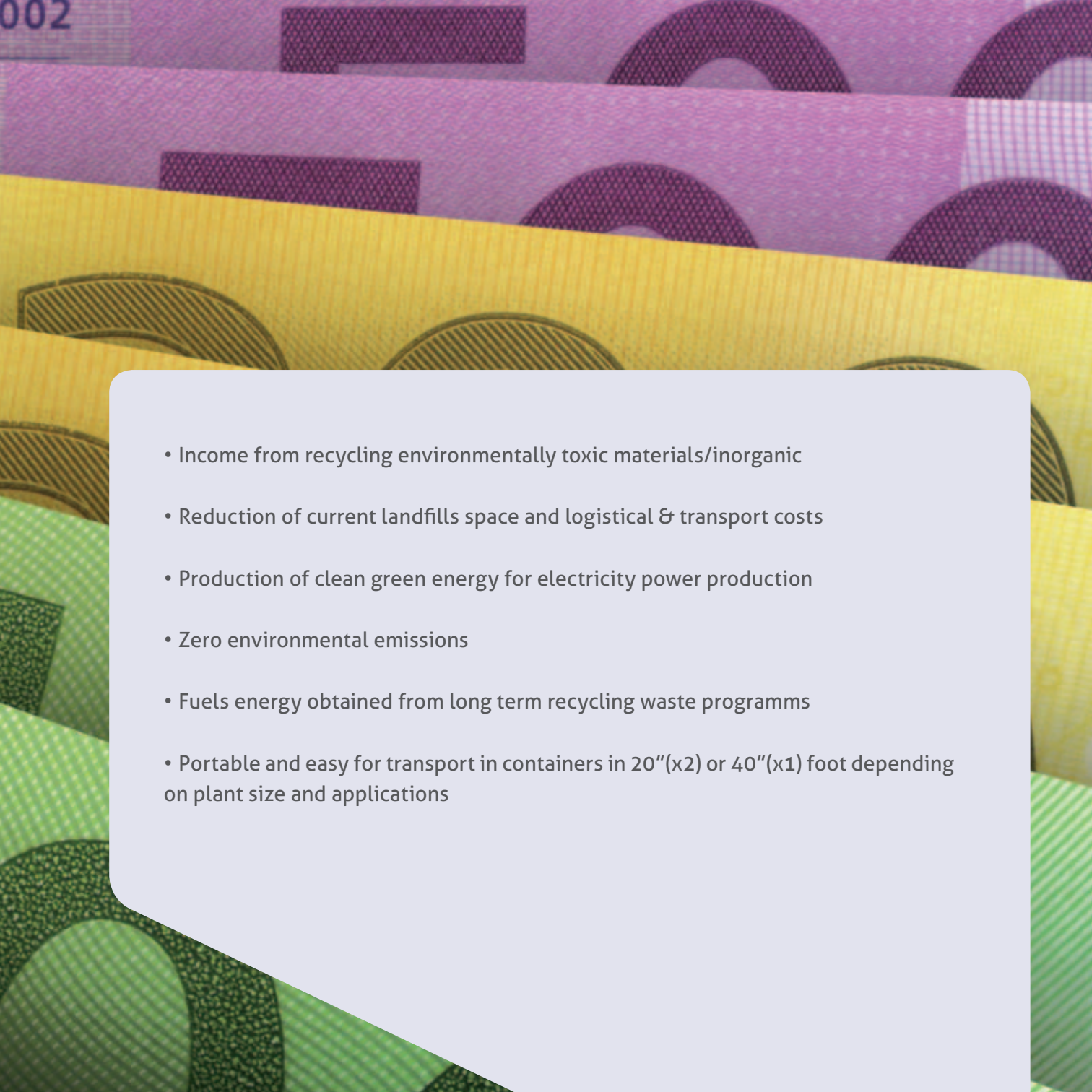
In the event of wishing to generate electricity, the plant may be used driven by gas generators and biodiesel produced by the plant which is capable of rotating with very little magnetic resistance, thus allowing the production of low cost electric power supply and being extremely energy efficient at the same time of still recycling the un-organic materials.

FINANCIAL & TECHNICAL ADVANTAGES OF THE TK-METEOR 4000/6000

- Income from funds generated from financial carbon credits, environmental grants for recycling tyres and plastics from governments or private institutions.
- No use of organic material such as wheat, plants, food or wood used or required
- Income from the sale of Biodiesel (41.850) liters / month)
- Income from the sale of Electricity (as plant configuration)
- Income from the sale of Carbon Black (31,620 kg / month)
- Income from the sale of Iron/steel (12,090 kg / month)



- Income from recycling environmentally toxic materials/inorganic
- Reduction of current landfills space and logistical & transport costs
- Production of clean green energy for electricity power production
- Zero environmental emissions
- Fuels energy obtained from long term recycling waste programms
- Portable and easy for transport in containers in 20”(x2) or 40”(x1) foot depending on plant size and applications

- Daily Capacity: 3,000 kg
- Operating time per cycle: 22 h
- Operating Temperature: 180/240/450/500 ° C
- System Dimensions: 2,3 m x 2,8 m x 9 m

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TECHNICAL DATA

TYRES RECYCLING PRODUCTION DATA

- Oil production per load: 1350 liters
- Obtaining iron loading: 390 Kg
- Black coal production capacity: 1020 kg
- Gas Production: 0.25 m3

PLASTIC RECYCLING PRODUCTION DATA

- Oil production per load: 2.100 liters
- Obtaining iron/steel loading:0,0 Kg
- Carbon Black Production per load: 0,0 kg
- Gas Production: 0.35 m3

CRUDE OIL/CONTAMINATED OIL SPILL LAND, BURNT OILS/FATS

1 TON CRUDE OIL EQUALS 850-1000 LITRES OF DIESEL FUEL

USABLE FOR AUTO, GENERATORS OR FOR SALE.

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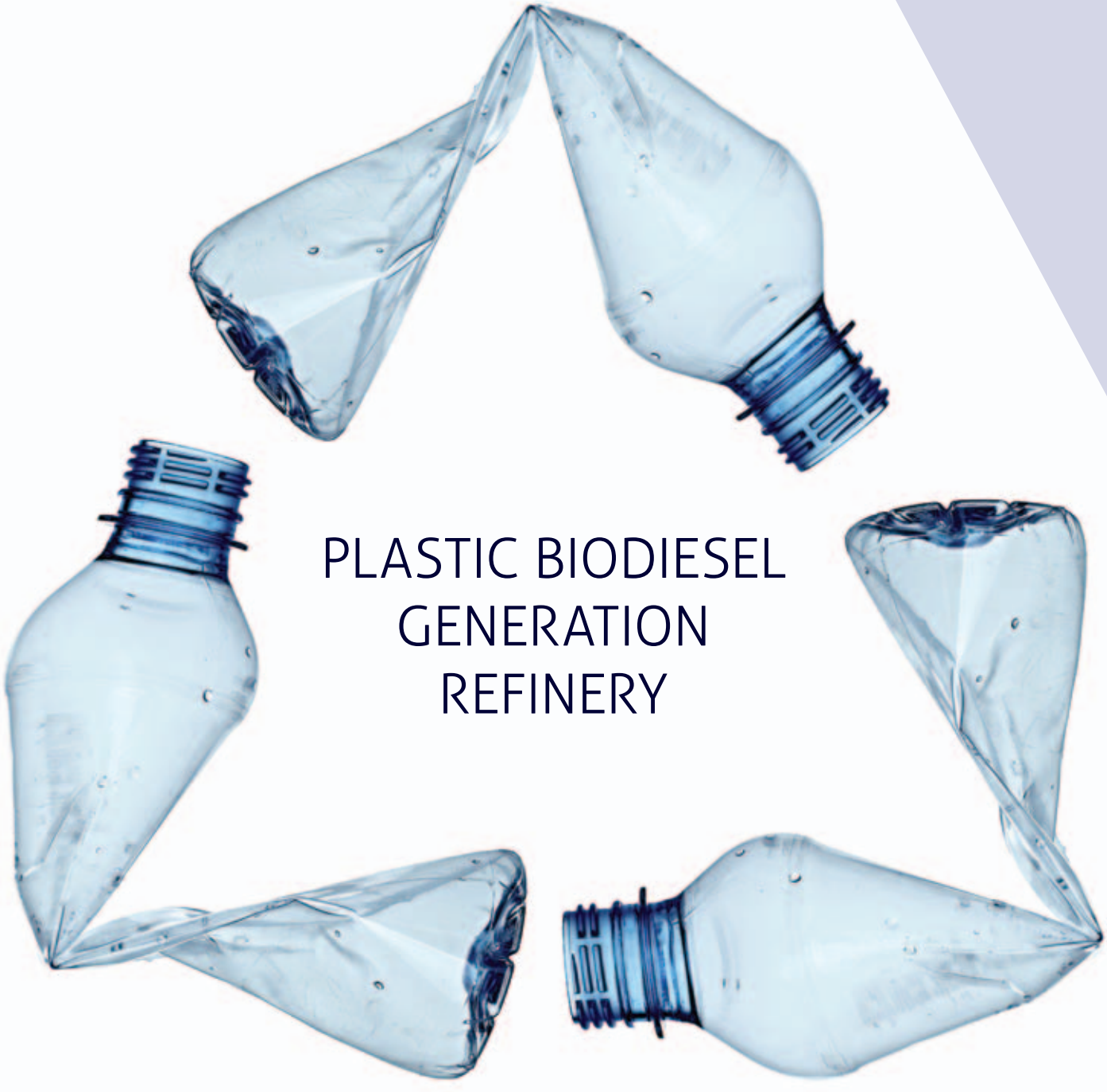
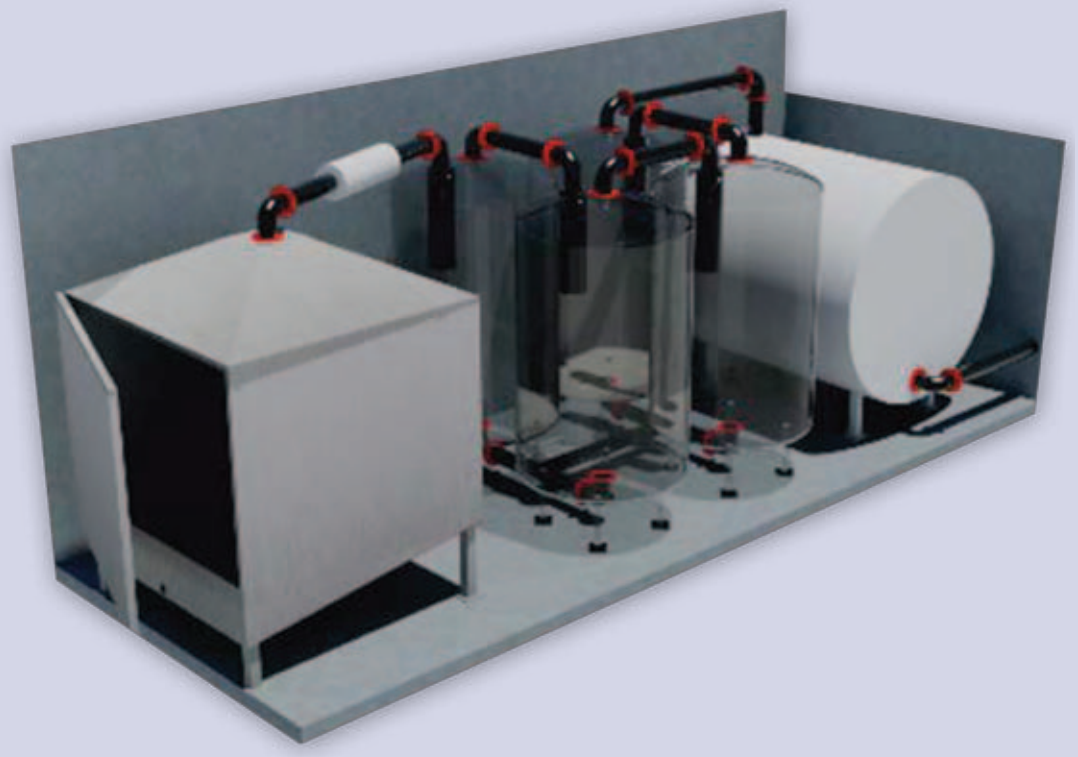
The TK-Meteor 4000/6000 Crude Oil, Tyre & Plastic Recycling Plant can be used directly for the production and sale of crude oil, iron and carbon black, but also may be the used to generate clean recycled electricity from inorganic waste.


PLASTIC BIODIESEL
GENERATION
REFINERY



TK-METEOR 4000/6000

CAPACITY: UP TO 20,000 KG PER CYCLE

USUAL RECYCLING SIZE: 6,000 KG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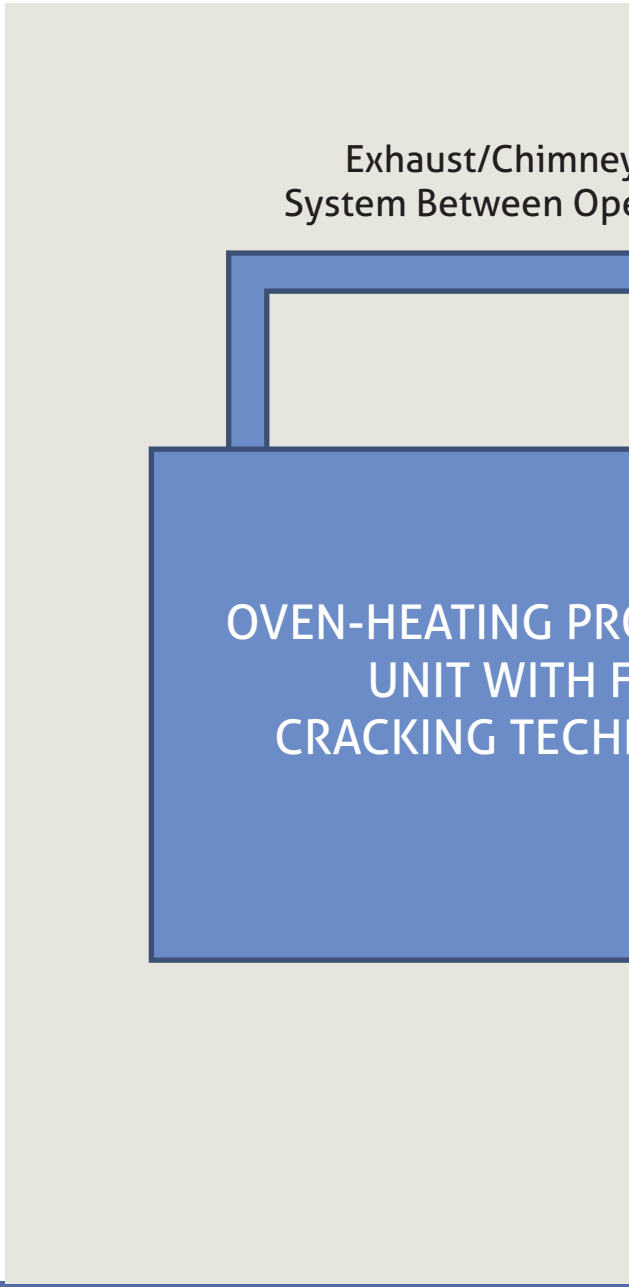
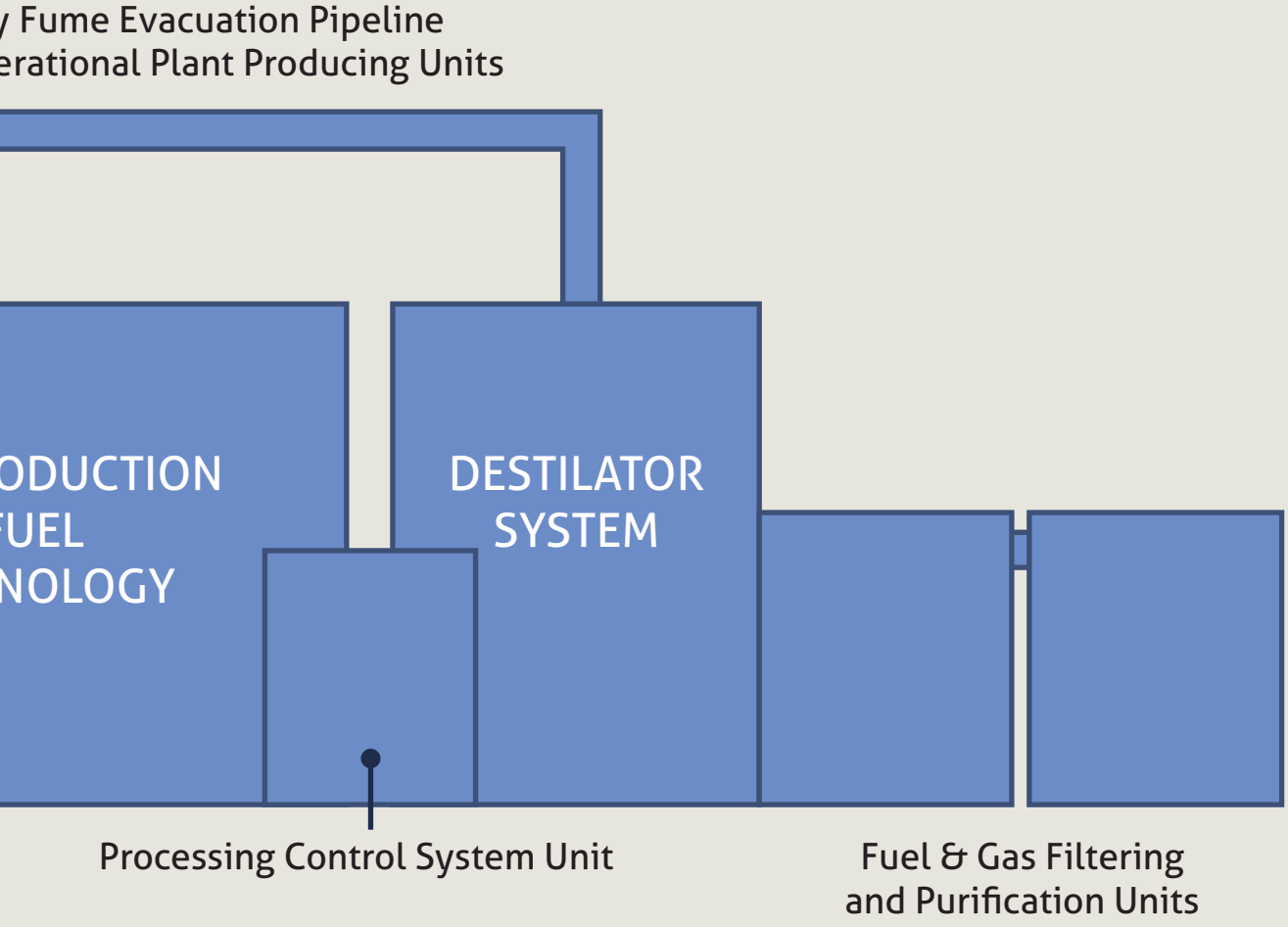
METEOR 4000/6000

LATERAL VIEW OF PLANT DESIGN

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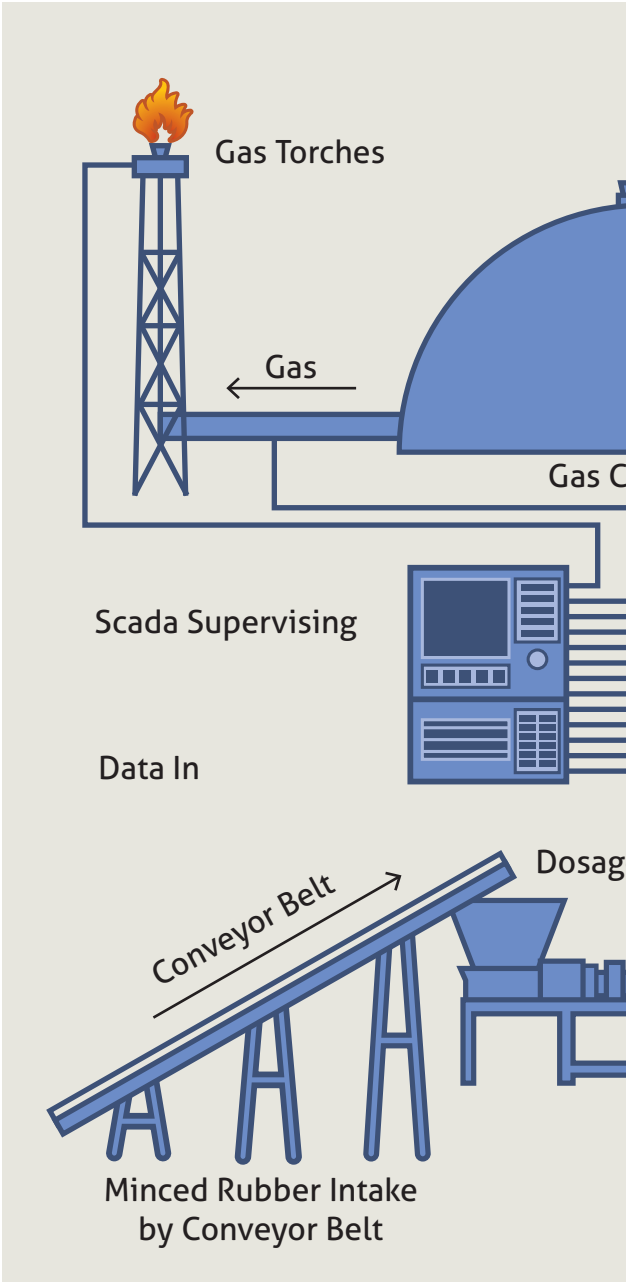
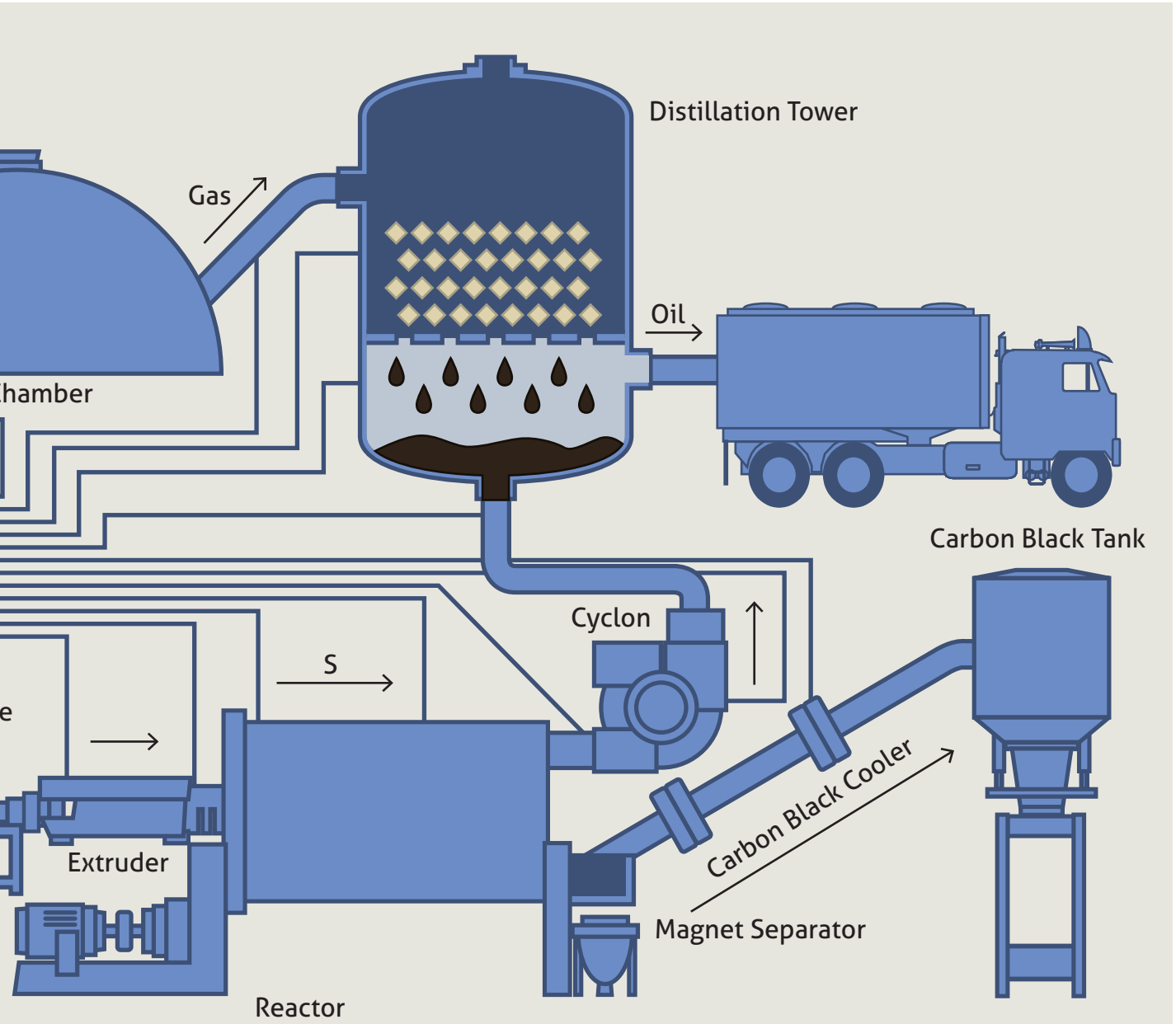
erational Plant Producing Units
ODUCTION
FUEL
NOLOGY
DESTILATOR
SYSTEM
Processing Control System Unit
Fuel & Gas Filtering
and Purification Units

METEOR 4000/6000

TYRE RECYCLING PLANT




Distillation Tower
Gas
Oil
hamber
Carbon Black Tank
Cyclon
S
e
Extruder
Carbon Black Cooler
Magnet Separator
Reactor

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THE
404

TK-METEOR RECYCLYING RUBBER/PLASTIC PLANT

SIX TON RECYCYLING PLANT FOR NORMAL, LARGE & SUPERLARGE RUBBER SIZED TYRES TRANSPORTABLE IN CONTAINERS

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The TK-Meteor 4000/6000 is a portable rubber tyre recycling plant built into four 40"foot containers used for the generation of crude oil and gas, with also of the advantage to obtain black carbon powder and the steel metal rings/cables inside the rubber tyres capable of recycling up to 10,000 kg of tyres per day of production per plant.

This plant is specially made to obtain maximum production of the total recycling process of any type of rubber plant and especially having the possibility of using the metal steel and other recycled materials obtained through this production/recycling process which benefits the protection of the environment and reduces/solves the continuous worries of the need of large storage areas especially for tyres of all types and sizes around our cities in legal and illegal landfills.

Due to its mobility of the plant we can deliver and install this plant anywhere in the world and it can be transported in four 40" foot containers by road, sea or by air. The TK-Meteor 4000/6000 is the first fully portable incorporated rubber tyre recycling plant with its own refinery and shredding plant all inclusive in the world.

MOST IMPORTANT TECHNI

- Totally built in stainless steel V2A
- Closed circuit production systems for no emissions.
- Operable the 24hours/7 days/365 days of the year.
- Up to 2190 Tons processed per year (180 Tons monthly)
- Simple inter-connecting of containers for quick reassembly
- All technical parametres controlled electronically
- Floating oven systems with no chimney using up to 50 kw
- Oven exterior heat reduction exterior of up to 94% (< 40°C)
- Turning systems with triple-phase connection of 3 kw at 3,5 rpm
- Thermal heating control system to process the production of crude oil with a power need of 3kw.
- Trolley transport systems to carry and to deliver all size tyres to the production section.
- European Union manufactured plant with CE seal of production.
- Maximum production of 3000 litres per complete cycle.

CAL & PRODUCTION DATA

- Maximum production of 1.200 kg of steel per complete cycle.
- Maximum production of 2.400 kg of black carbon per complete cycle.
- Maximum production of 0,6 m3 of per complete cycle.
- Installation of passive and active security and safety technology.
- Only 3 operators needed to operate plant per shift.
- Maximum size of rubber tyre shreddered /crushed pellets of 1-3 cm.
- Valves and control systems to control production velocity.
- All electronics easily installed and in panel format for easy control and use.
- No "TAR" or "TAR" based waste due to our exclusive "clean" recycling technology. (Please view photos after working recycling programme)
- Carbon Black Dust/powder used for manufacturing of "New Rubber Tyres", "Anti-Radar Detection Materials/Paints", "High Intensity Solar Panels", etc.

TECHNICAL & OPERATIONAL DATA

DIMENSIONS OF INSTALLED OPERATIONAL UNITS

Dimension of the containers (2x units)	Height Width Length	2,45m 2,37m 6m
Dimension needed to install plant	Minimum	95 m^2

CONTAINER 1

Oven	Volume Diameter Length	10 m 31,82m 5,2m
Daily production capacity	kg	6000
Minimum production stock of	kg	84,000
Recommend rubber tyres shredded pellet size	cm	1-3
Electric energy consumption	kw	50
Thermal heating sensors units	units	4
Electronic control systems		Yes
Speed of internal turning	rpm	3,5
Full cycle hourly production	hours	24
Inside production temperature	ºC	500
Exterior temperature less than	ºC	<40

CONTAINER 2

COOLING SYSTEMS

Dimensions	Height Width Depth	2,1 m 2,1 m 1,5 m
Plant Material made of	Stainless Steel V2A	
Gross weight	kg	350
Cooling fluid		H_2O
Cooling systems energy consumption	Kw	3
Control sensors	Unit	2

STORAGE SYSTEMS FOR CRUDE PRODUCTION

Dimensions	Height Width Depth	1 m 2,1 m 0,6 m
Machinery Material made of	Stainless SteelV2A	
Gross weight	kg	270
Storage capacity	liters	1200
Pumping energy requirements	Kw	0,3
Control systems	units	2

ANTI-ACID TECHNOLOGY

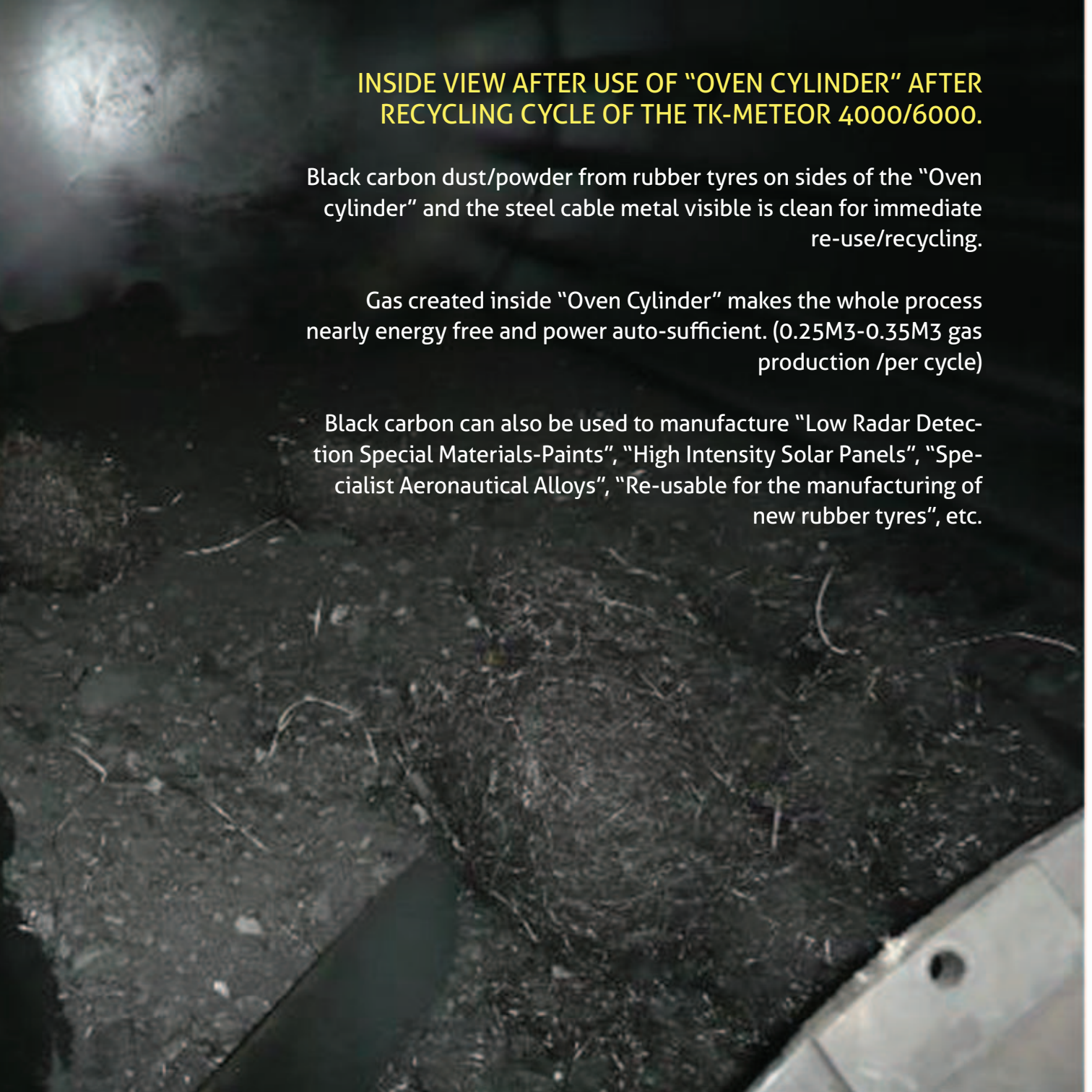
Dimensions	Height Width Depth	1,4m 2,1m 0,8m
Machinery material made of	Stainless steel V2A	
Gross Weight	kg	290
Re-circulating unit	litres/min	70
Electric energy impulsion systems use	Kw	1,5

ELIMINATING-FUMES/ODORS SYSTEMS

Control sensor unit	Units	1
Dimensions	Height Width Depth	1,1m 2,1m 0,5m
Machinery material made of:	Stainless Steel V2A	
Gross Weight	Kg	220

GAS PURIFICATION SYSTEM

Dimensions	Height Width Depth	2m 0,6m 0,6m
Machinery material made of	Stainless Steel V2A	
Gross Weight	kg	145
Re-circulating Capacity	Litres/min	70
Electric Energy Impulsion consumption	kw	1,5
Control Sensors	Units	2

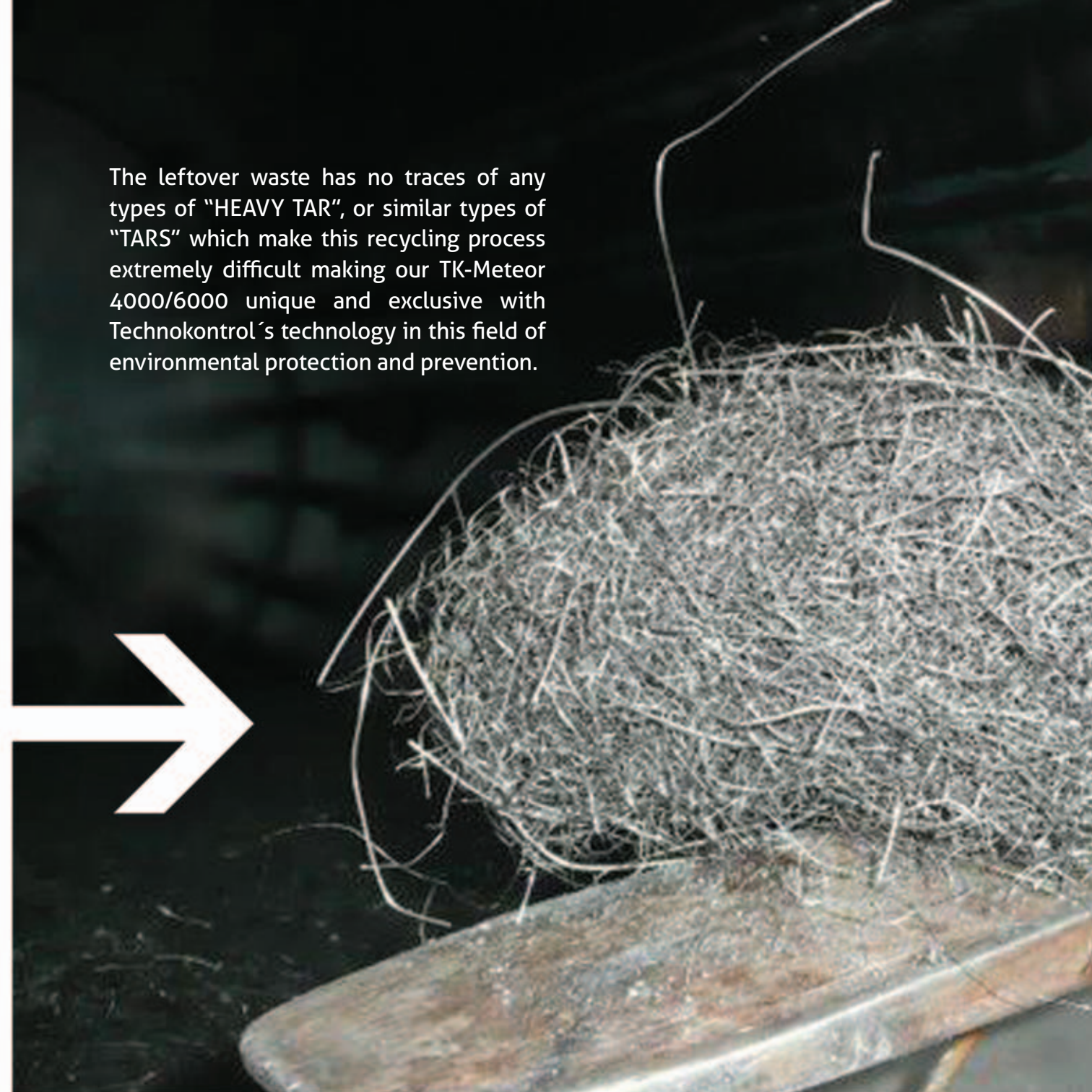


INSIDE VIEW AFTER USE OF "OVEN CYLINDER" AFTER RECYCLING CYCLE OF THE TK-METEOR 4000/6000.

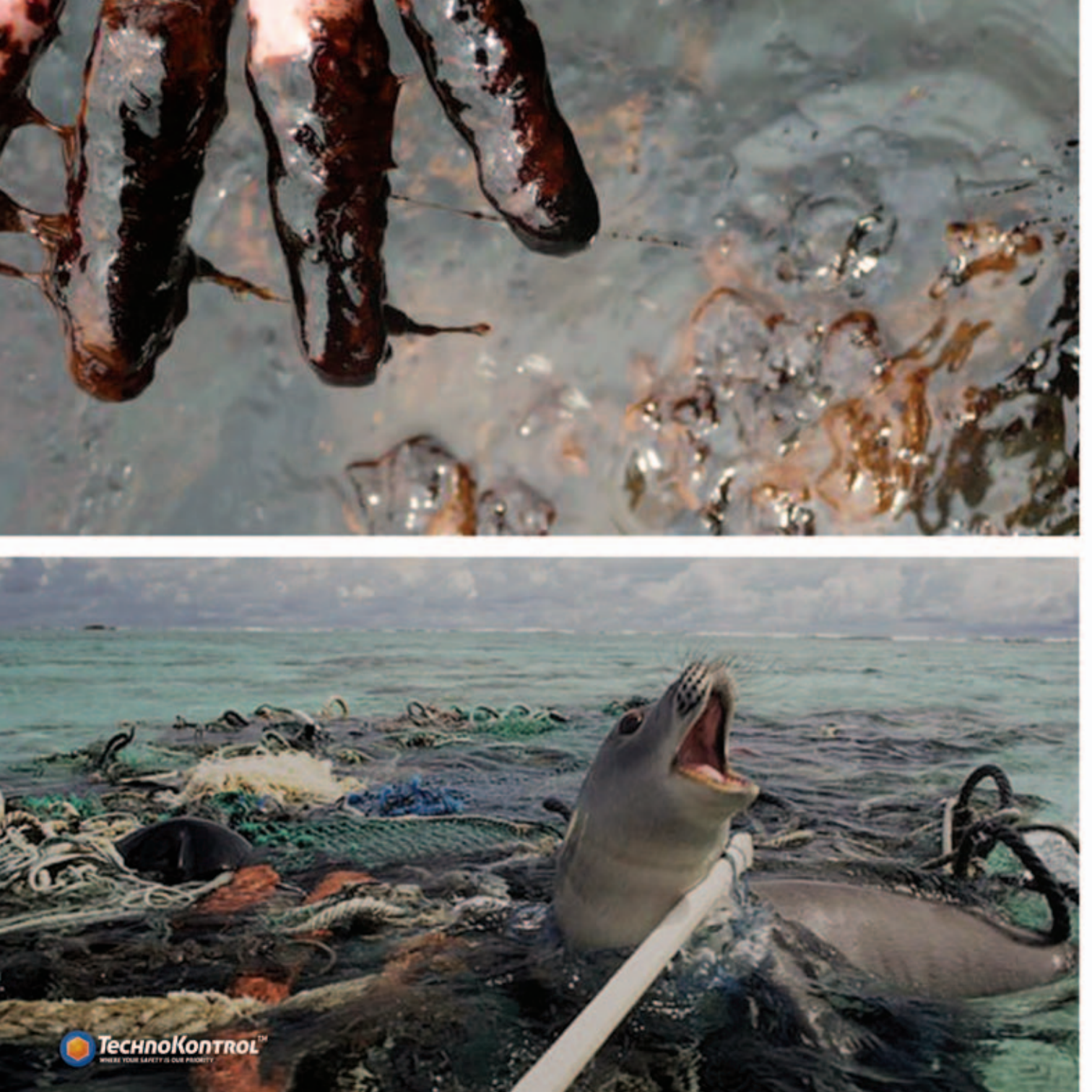
Black carbon dust/powder from rubber tyres on sides of the "Oven cylinder" and the steel cable metal visible is clean for immediate re-use/recycling.

Gas created inside "Oven Cylinder" makes the whole process nearly energy free and power auto-sufficient. (0.25M3-0.35M3 gas production /per cycle)

Black carbon can also be used to manufacture "Low Radar Detection Special Materials-Paints", "High Intensity Solar Panels", "Specialist Aeronautical Alloys", "Re-usable for the manufacturing of new rubber tyres", etc.



The leftover waste has no traces of any types of "HEAVY TAR", or similar types of "TARS" which make this recycling process extremely difficult making our TK-Meteor 4000/6000 unique and exclusive with Technokontrol´s technology in this field of environmental protection and prevention.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REFINERY UNIT

TK-MRU 4000/6000

REFINERY UNIT TK-MRU 4000/6000

FOR 6000 DAILY LITERS OF CRUDE OIL PRODUCTION

The TK-MRU6000 refinery is an unit used to refine crude oil to obtain diesel fuels. Its production is of 10,000 litres per day (cycle) with a daily net production of 91%.

The TK-MRU6000 refinery plant has been designed to make crude but with some technical changes including simple "cracking technology" we can produce diesel, gasoline, kerosene heavy/light oils for heating systems, for example.

It has a continuous production system not needing to load up any crude oil fuel tank of fuel deposits other than the already included anti-explosion protected TK-Storage Fuel Tank.

The TK-Meteor 4000/6000 and TK-MRU 4000/6000 are portable and work side by side.

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900
800
700
600
300
200
100


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MAIN TECHNICAL & FEATURES

- Made of stainless steel V2A
- Closed circuit production. No external emissions.
- Refinering at 160 litres per hour.
- Thermal heat sensors controlling operations.
- Continuous refinering process.
- Totally electronically controlled.
- Oven turning systems working at 3 kw a 3,5 rpm.
- Thermal heating control to obtain diesel fuel needing 15kw of energy.
- European Union manufactured with CE seal of manufacturing.

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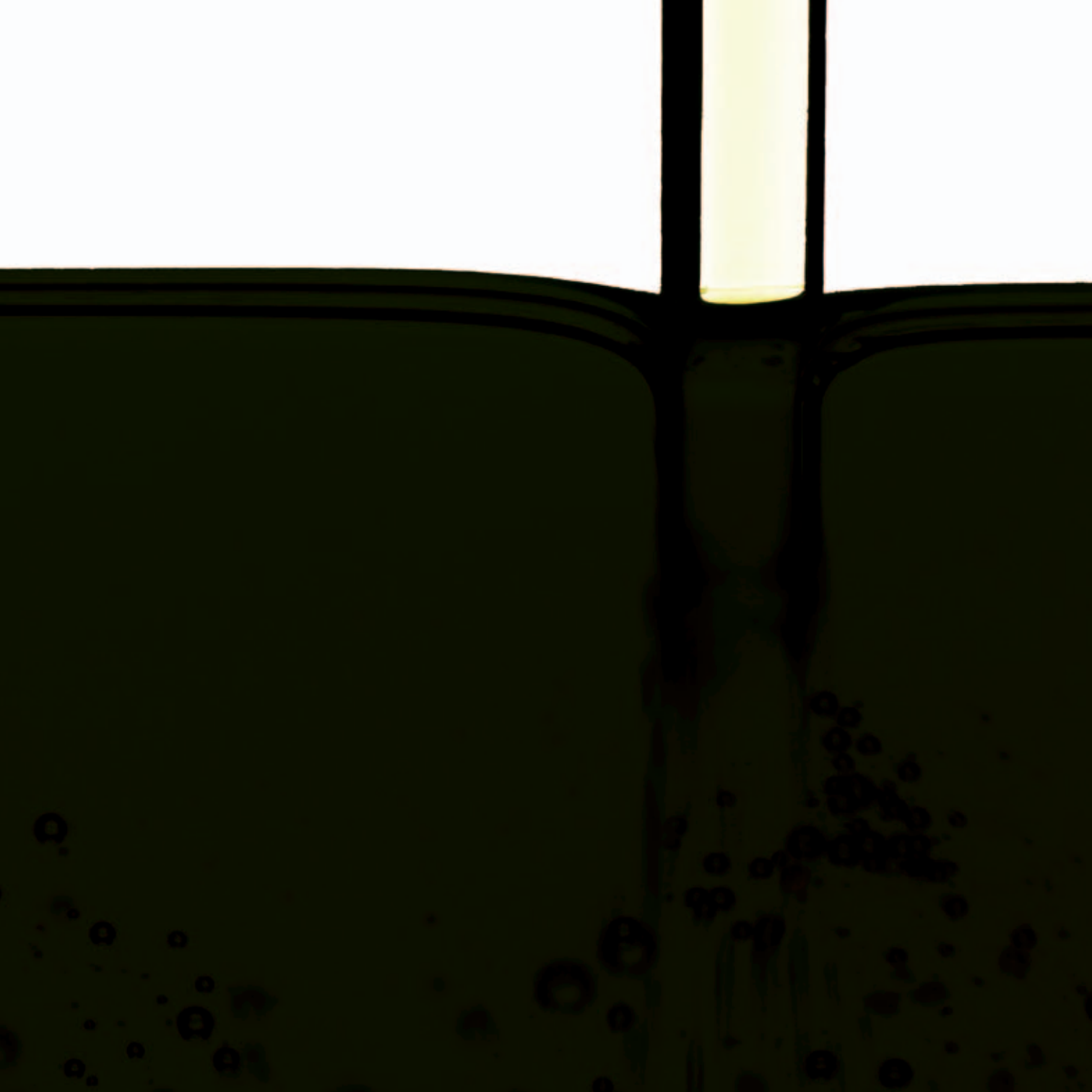
TECHNICAL & OPERATIONAL DATA

REFINERY DIMENSIONS

Dimensions	Height Width Length	2m 1m 4m
Dimensions of the refinery required space	Minimum	15m^2
Daily loading capacity	Litres	4,000
Thermal Heat Sensors	Units	3
Electronic control systems		Yes
Daily operational hours	Hours	22/24
Working Temperature	ºC	+300
Gross Weight	kg	510
Exterior temperature less than	ºC	<40

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WITH OUR INORGANIC MATERIALS RECYCLING TECHNOLOGIES, WE CAN RECYCLE THESE WASTE TYPES WITHOUT DAMAGING THE ENVIRONMENT OR OUR ECOSYSTEMS IN AN EFFECTIVE AND ECONOMICALLY VIABLE WAY, PARTICULARLY BENEFICIAL FOR OUR PLANET AND HUMAN/LIVING BEINGS.


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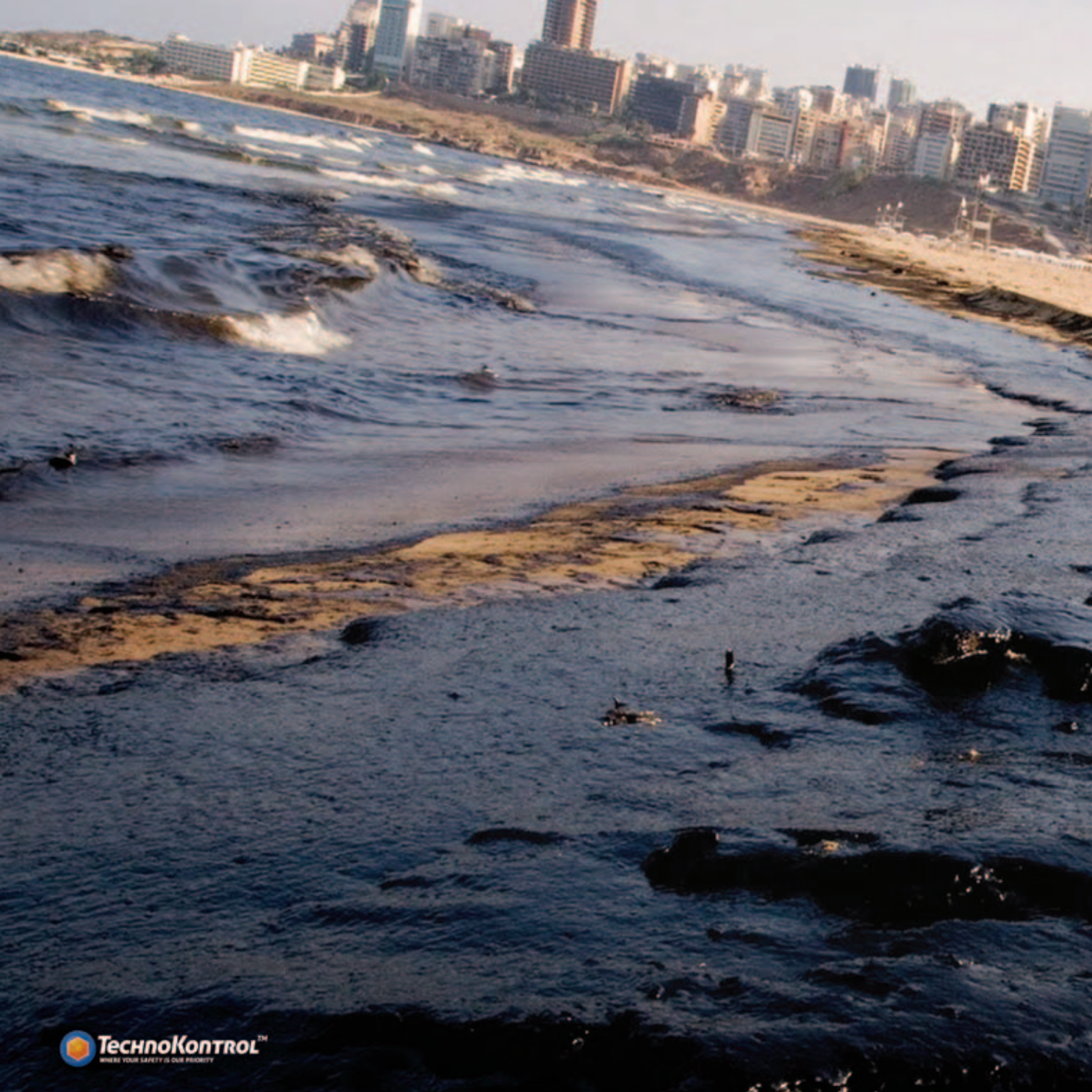
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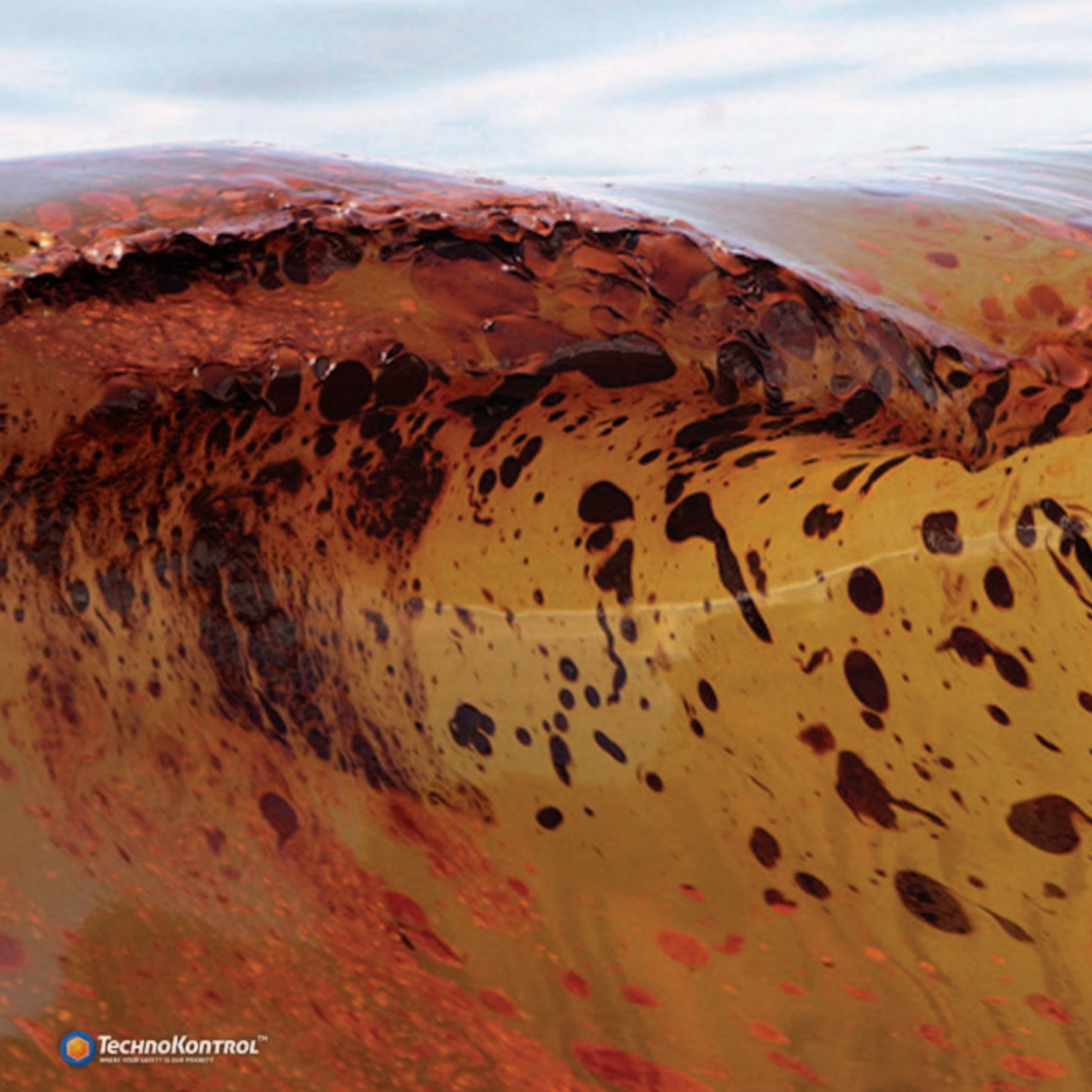
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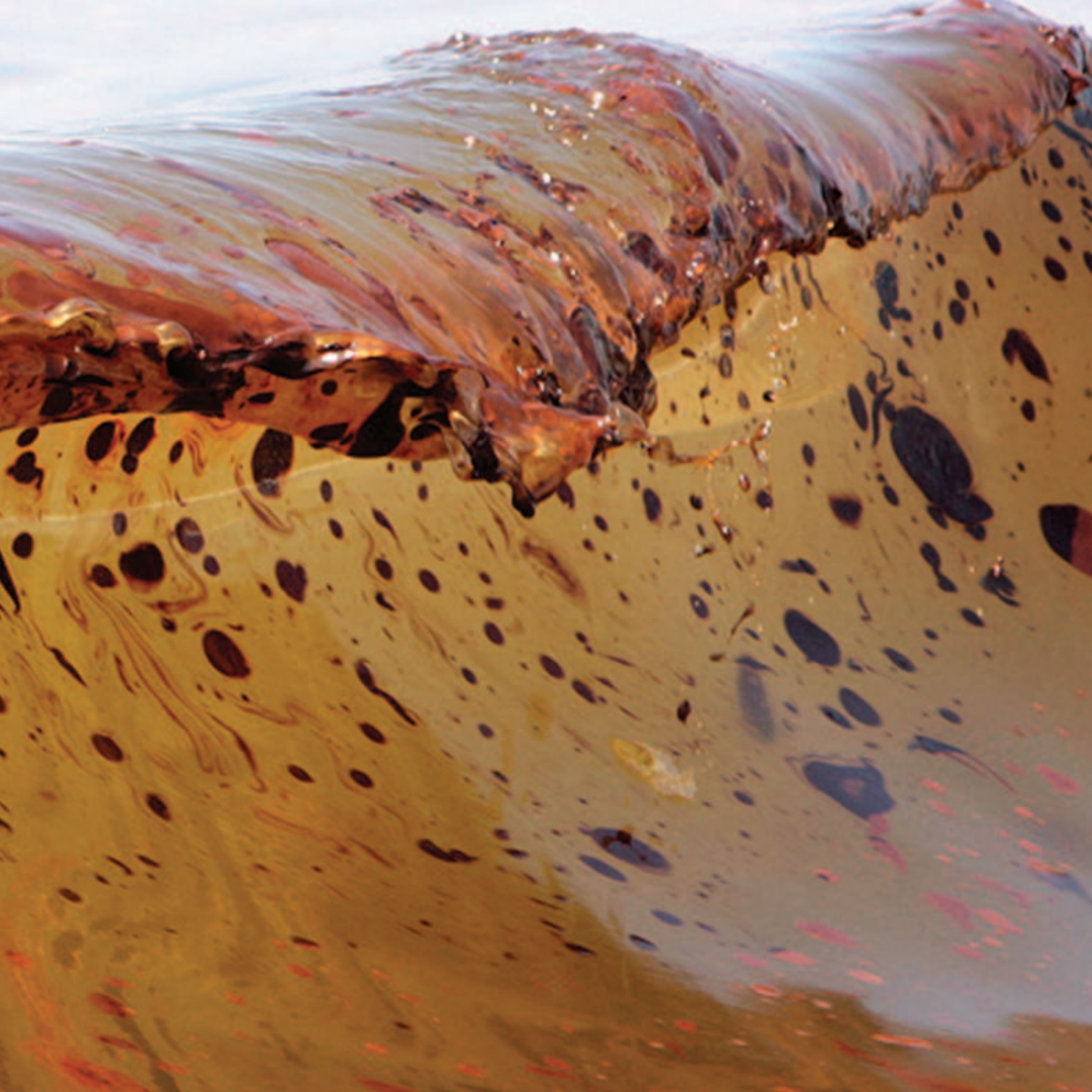

TK-GLOBAL ENVIRONMENT™

WHERE EFFICIENCY AND RELIABILITY BECOME A REALITY

PRODUCTS & STATE-OF-THE-ART TECHNOLOGY
WITH THE HIGHEST QUALITY AND SERVICE GUARANTEED BY

TECHNOKONTROL-GLOBAL ENVIRONMENT

WWW.TECHNOKONTROL.COM

ALL OUR PLANTS ARE PROTECTED DURING
INSTALLATION BY OUR GLOBAL SECURITY SERVICES COMPANY

ELITE BLACK NIGHT VIPER SECURITY SERVICES

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CERTIFICATES


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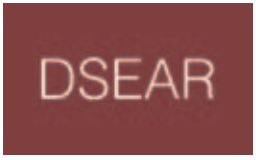
S&A
HEALTH AND SAFETY
AUTHORITY


DSEAR


HAZLOC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Engineers
Building
Officials
Section


JAA


WILDLAND
MANAGEMENT
SECTION


Electrical Section
NFPA


CE


UL


INTERTEK
ETL
LISTED
US


RoHS
COMPLIANT


ISO
International
Organization for
Standardization


NATO
OTAN


SOUTHWEST


EUROPEAN AVIATION SAFETY AGENCY
AGENCE EUROPÉENNE DE LA SÉCURITÉ AÉRIENNE
EUROPÄISCHE AGENTUR FÜR FLUGSICHERHEIT


NFPA
National Fire Protection Association
The authority on fire, electrical and building safety

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