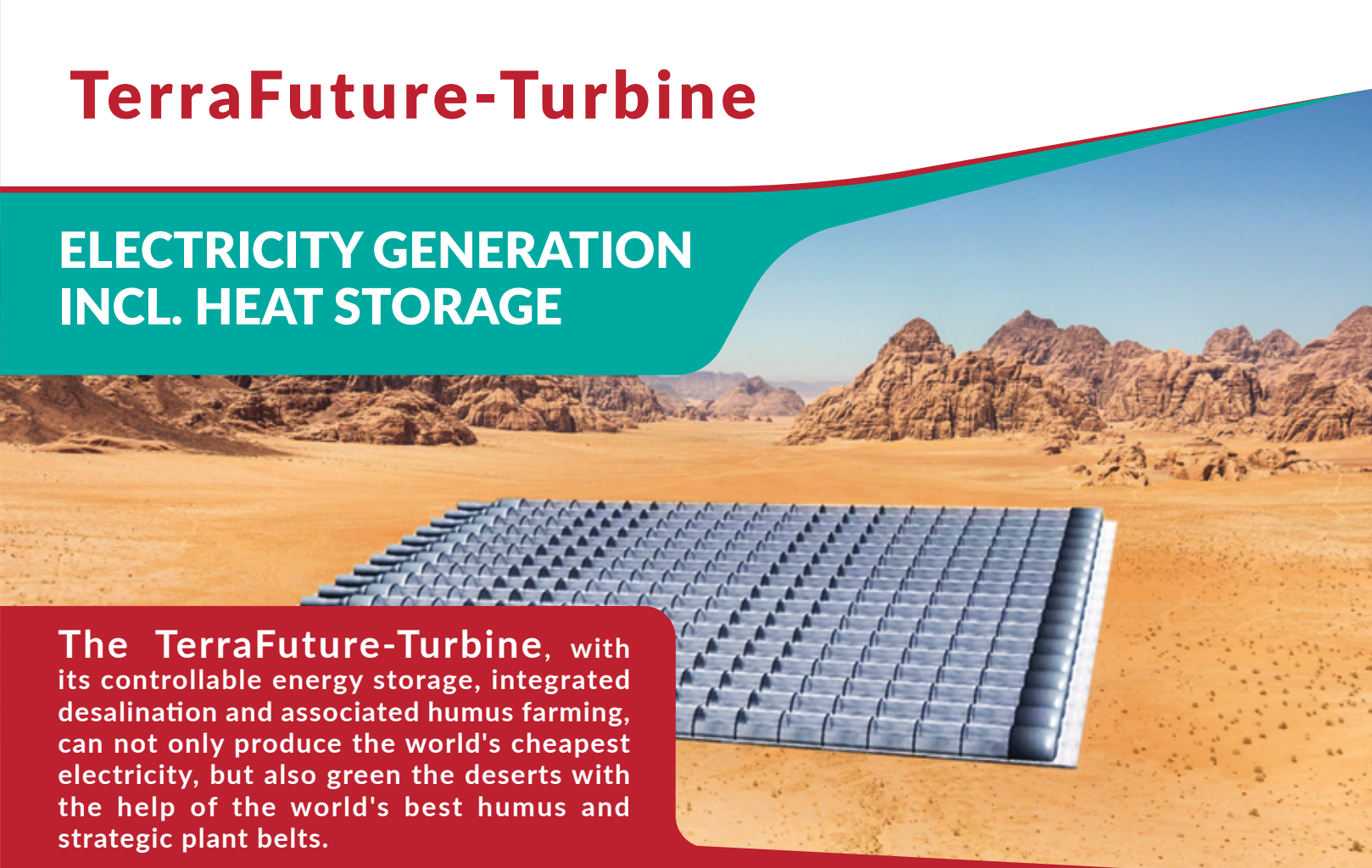




TECHNOLOGY COMPOUND

TerraFuture-Turbine

ELECTRICITY GENERATION INCL. HEAT STORAGE



The TerraFuture-Turbine, with its controllable energy storage, integrated desalination and associated humus farming, can not only produce the world's cheapest electricity, but also green the deserts with the help of the world's best humus and strategic plant belts.

Clean, safe & reliable, it represents a new generation of energy production, by harnessing the power of the Sun and compressed air.

Achieving a construction period of only one year and a life-span of over 200 years, with a simple, robust and maintenance-free design, it ensures the highest level of supply reliability alongside the lowest investment and running costs to generate unrivaled cheap electricity in virtually unlimited quantities.

It enables all countries to build a complete recycling economy, thus conserving natural resources.

WHAT MAKES THE TERRAFUTURE-TURBINE BETTER THAN ANY PREVIOUS SOLAR AND POWER TECHNOLOGIES?

Controllable, integrated energy storage using water as the cheapest and most effective material for the storage of low-temperature heat and for absorbing solar radiations.

Combined with the insulated concrete basin underneath, as the cheapest long-term storage for low-temperature heat, it allows the production of electricity only as needed with the highest energy use.

Uses a half-cylinder of highly efficient, IR-reflecting insulated glass as a solar collector and pressure vessel that enables the use of air as the working medium, suppressing all heat losses and having by far the highest surface efficiency by eliminating the need of cooling behind the power turbine.

With the above mentioned factors, it achieves a storage capacity of almost 100% and, alongside its low investment and running costs, can generate the lowest electricity cost in comparison to all other technologies

It also uses the thermal energy stored in their reservoirs for water desalination that, combined with TerraFuture-Humus production and agriculture technology, makes greening deserts and drylands almost worldwide possible by restoring the fertility of eroded soils, consequently creating large amounts of CO₂

TerraFuture-Desalination

SALT WATER DESALINATION

TerraFuture Power Plants with integrated desalination are the only ones who can produce immense quantities of cheap enough water in order to be able to irrigate arid lands with high erosion damage, leading to the successful regreening of vast desert areas.

If we would be able to get fertile soil back into the desert areas and irrigate these regions, we could indeed start intensive agriculture.

For this to happen, a gigantic quantity of water needs to be desalinated and pumped over thousands of kilometers, whereby conventional methods are too expensive and power consuming.

The **TerraFuture-Desalination** instead uses the full impeding solar energy of the TerraFuture-Turbine for a very cost-efficient method, while recovering it completely in order to generate new power.

Underground water is practically always available but often brackish and, while affordable desalination became a necessary asset for the TerraFuture-Humus agriculture, but no satisfactory solution was currently available, the TerraFuture Technology Compound developed a very simple solution that reuses the salty water from its heat storage in order to extract the steam resulted from boiling at the water surface, transferring this heat via exchangers back to the salt water.

Due to the outstanding design of the TerraFuture-Turbine, no thermal energy is lost in both the desalination and pumping processes.

THUS RENDERING IT AS THE MOST EFFICIENT, INEXPENSIVE AND ADVANCED DESALINATION SOLUTION IN THE WORLD.

Supplying the cheapest sweet water in the desert areas, which is necessary for large-scale desert agriculture, industry and human use.

This allows the placement of strategic plant belts in order to produce rain in deserts and green them with the help of TerraFuture-Humus.

TerraFuture-Humus

HIGHEST SOIL FERTILITY



Humus is a natural product whose formation takes around 10 years, but can be reduced to only 5 weeks, by means of a program-controlled high-temperature rotting in our specialized humus reactors.

This fully polymerised humus is extremely stable both thermally and chemically, and can presently only be manufactured by the TerraFuture Compound, which, however, can also produce it in tropical and arid areas where nature doesn't normally generate it, guaranteeing its life in the soil for at least **10,000 years**.

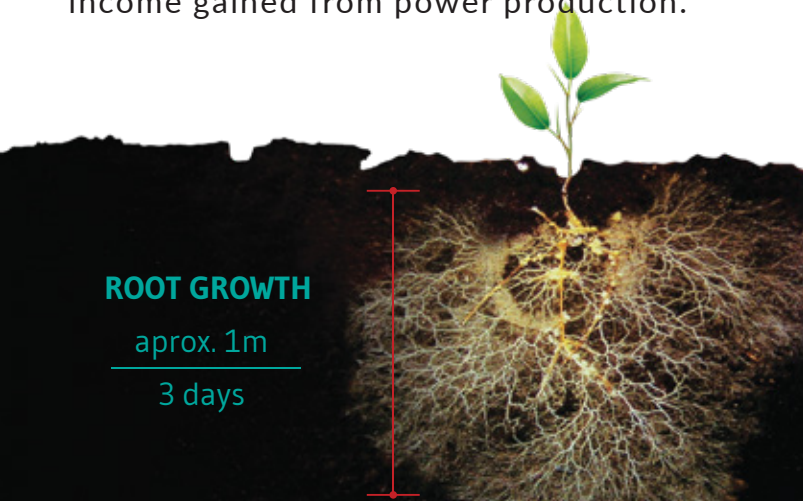
It enables a richer increase in soil fertility, with a **root growth of 1m in just 3 days**, facilitating cheaper and higher quality food production in the area and generating additional revenue that exceeds by far the income gained from power production.

Agriculture suffers from the fact that the majority of organic contents in the soil decrease more and more, especially the proportion of humus, which, among other things, lies in the waterlogging, and leads to higher fertilizer requirement, which in turn leads to faster decrease in organic content, thus creating an ever growing spiral of decreasing fertility.

This not only increases the running costs in an already difficult and competitive industry, but also threatens the existence of farms due to possible erosion.

Farmers have been forced to try manure as a substitute for artificial fertilizer, but have caused a dangerous accumulation of nitrogen in their soils, which also threatens the quality of drinking water, as recently noted. However, this nitrogen surplus in the soil also threatens soil fertility, because it increases the growth of harmful bacteria, which then attack the healthy roots and thus destroy the crops and threaten the existence of the farms themselves.

The plowing (25%) of TerraFuture-Humus not only rescues the soils, but also gives them unprecedented fertility by **increasing the concentration of soil bacteria by a factor of 1.000** as they solubilize the soil minerals and convert them into plant nutrients.



ROOT GROWTH

aprox. 1m

3 days

TerraFuture-Humus Adsorption Storage

HYDROGEN AND NATURAL GAS TRANSPORT



Purified natural gas, adsorbed in special TerraFuture-Humus Tanks, reduces cryogen transportation costs by 90% and is a first class, easy to handle, diesel fuel with zero NOx emissions.

The breakthrough for the fuel cell: clean electricity for electromobility!

Electromobility today is based on lithium-ion batteries, their life and thus their auto-range, especially by fast charging, being very limited.

The right technology lies in the fuel cell, whose market introduction is hampered by the fact that cryogen transport and storage of hydrogen are much too expensive. But that changes if you have a cheap and effective adsorbent:

TerraFuture AG (i.G.) has this adsorbent in their (improved) humus, which ensures not only a very simple emptying and filling, but above all, a nearly pressure-less storage and transport at room temperature.

This reduces the cost of cryogen transport and storage by almost 88%, rendering the fuel cell victorious and the electromobility unstoppable.

In contrast to fuel from oil, methane burns cleaner and with almost no nitrogen oxides, but is too expensive due to contemporary cryogenic transport methods.

In the TerraFuture Technology Compound, adsorbed natural gas is stored and transported using a **pressure-less method at room temperature** for only 12% of the normal cryogenic transport cost, making the filling and emptying process just as easy as with liquid fuels.

Adsorbed natural gas is a green fuel because the adsorption humus used in its transport is **long-term chemically and thermally stable**, being able to remain stored in tanks for centuries along with all the CO₂ that the plants have assimilated from the air.

Fuel cell technology is currently unable to make a breakthrough because the biggest obstacle is the much too expensive cryogenic transport of hydrogen. The adsorption of hydrogen on humus brings that decisive breakthrough.

TerraFuture Caterpillar Track

FULL OFF-ROAD CAPABILITY



In many countries locomotion is still a major problem.

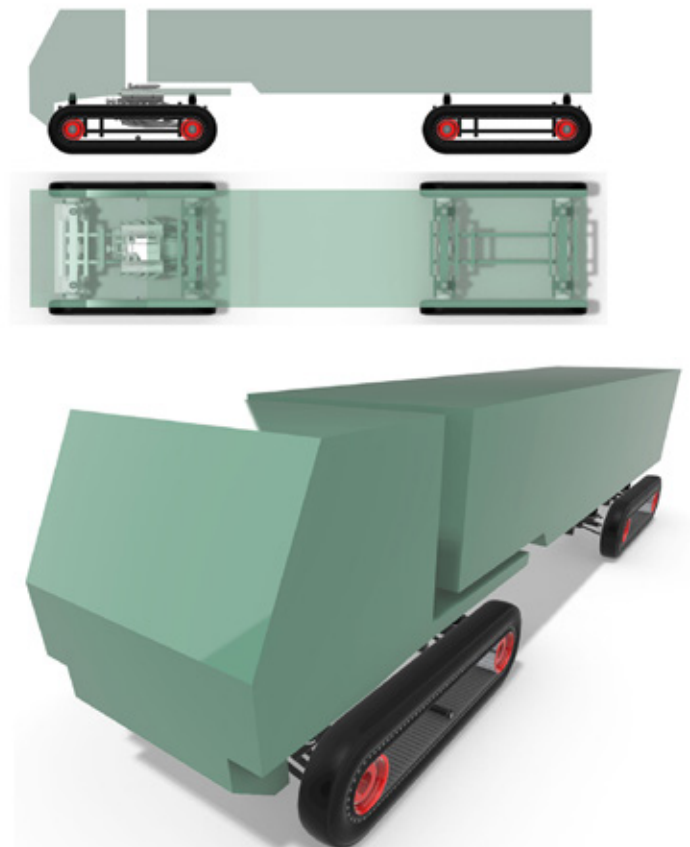
Deserts, swamps, perma-frost areas, rainforests and river crossings make it difficult to progress worldwide. In most developing countries, unpaved roads are still the backbone of the transport system.

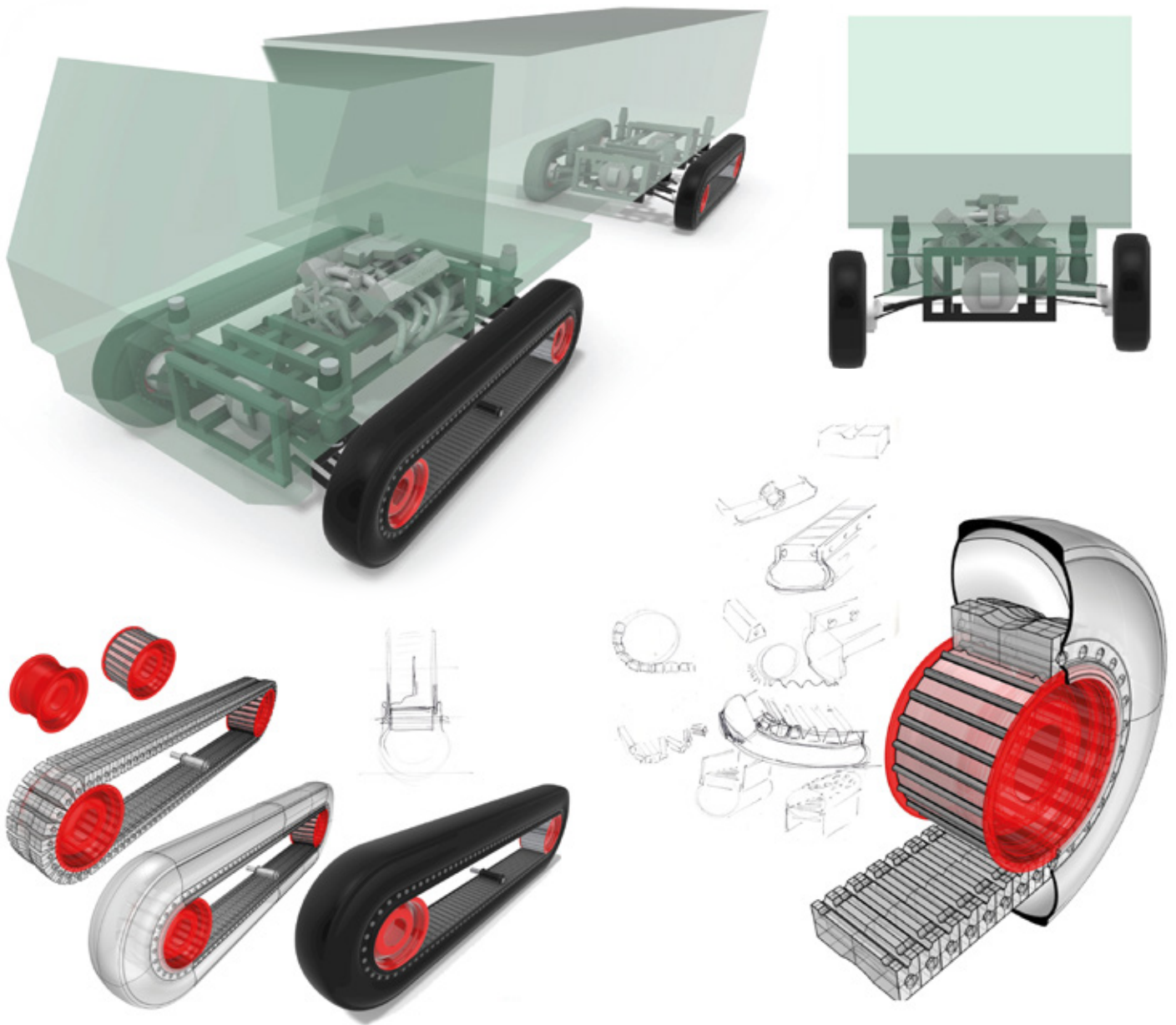
The **TerraFuture-Caterpillar Track** guarantees trucks with full off-road capability even on mud, sand, snow or off-road at low cost. It is now possible to make entire regions accessible and economically viable all year round.

In addition, studies on the roads in the Congo Basin of the DR Congo have shown that, due to the high groundwater level on unpaved roads, standard all-wheel-drive trucks create deep furrows, dig themselves in and are as slow as horse-drawn wagons or can even get stuck completely.

Because the caterpillar track does not cause furrows due to the low ground pressure, but it even slightly compacts the soil, the slope surface automatically improves. Regular leveling is no longer necessary, which results in savings of many billions of US dollars. In addition, a much higher transport volume can be achieved without incurring higher costs!

The caterpillar tire can reach speeds of up to 80 km/h.





The caterpillar track is very manoeuvrable, which is particularly important on mountain passes or hilly terrain. This new development in locomotion has many advantages, especially in areas that are difficult to access.

ALL THE BENEFITS AT A GLANCE

- ✓ High off-road capability in difficult ground conditions such as ice, snow, mud, swamp or sand
- ✓ Worldwide application possibilities
- ✓ Year-round development of entire regions possible
- ✓ No digging or furrows due to low soil pressure
- ✓ The enlarged contact surface on the floor does not let the wheels fall individually into holes
- ✓ No corrugated steel lines (transverse grooves in sand)
- ✓ Very agile, especially on mountain passes
- ✓ No more road maintenance costs necessary
- ✓ Increase in transport volume
- ✓ Speed up to 80 km/h

KNOW-HOW



TERRAFUTURE-HUMUS

We have over seven years of experience in evaluating and planning of additional energy and water supplies in the desert province of the Northern Cape (South Africa) as well as the evaluation of auxiliary industries such as mining and utility for supplementary energy and water supply.

We examined and assessed all power supplying technologies with a focus on “renewable energies”.

THE RESULT IS THE TERRAFUTURE-TURBINE!

TERRAFUTURE-TURBINE, ENERGY STORAGE AND DESALINATION

THE TERRAFUTURE TECHNOLOGY NETWORK WAS COMPLETED AFTER 25 YEARS AND WAS PATENTED BY US.

We are members of a group of scientists who made Germany the market leader in humus research and production. With a featured network, we are the only ones who can preserve and develop this scientific and practical expertise to transform deserts into gardens and multiply agricultural yields.

In recent decades, we have built around 40 prototypes of humus reactors that have been continuously technologically optimized and developed.

Today's technology status is at its highest level, with the highest efficiency of all other solar technologies.

The TerraFuture-Turbine and the energy storage system have seen a 30% increase in efficiency and material costs have been reduced by 50% since 2014 through optimization measures, newer materials and technical components.

With regards to individual components, we work together in successful cooperation with world-leading suppliers and manufacturers.

TerraFuture Technology Compound

the right solution for the World's Economy at the right time

- Cheap TerraFuture electricity (1.5 €/kWh), also leading to the recycling of scarce raw materials and avoiding the threat of important minerals shortage.
- Construction period for TerraFuture Power Plants (of only one year) accelerates economic growth
- Cheap electricity and cheap water can make on-site refining possible in developing countries
- TerraFuture-Humus can heal the vast soil erosion and facilitate high-yielding harvests
- TerraFuture-Turbines with integrated desalination are needed here, as only their water is cost-effective enough for irrigation in arid lands with large erosion damage in order to green deserts.
- Purified natural gas, adsorbed in special TerraFuture Humus Tanks, reduces cryogen transportation costs by 90% and is an easy-to-handle, first-class diesel fuel with zero NOx emissions.

THIS CREATES HUGE NEW HABITATS AND MARKETS

This will eventually generate positive cooperation between neighboring countries and political stability in association with the new jobs created.

The TerraFuture Compound will ultimately produce more than 70% of the world's electricity.

LET'S START TOGETHER!



CONTACT

TerraFuture AG (i.Gr.)

Hauptstrasse 193
D-50169 Kerpen-Horrem

- ☎ Phone +49 (0)2273 - 4 064 483
- ☎ Fax +49 (0)2273 - 4 064 478
- ✉ E-mail info@terrafuture.de
- 🌐 Web www.terrafuture.de



FOR A BETTER WORLD

