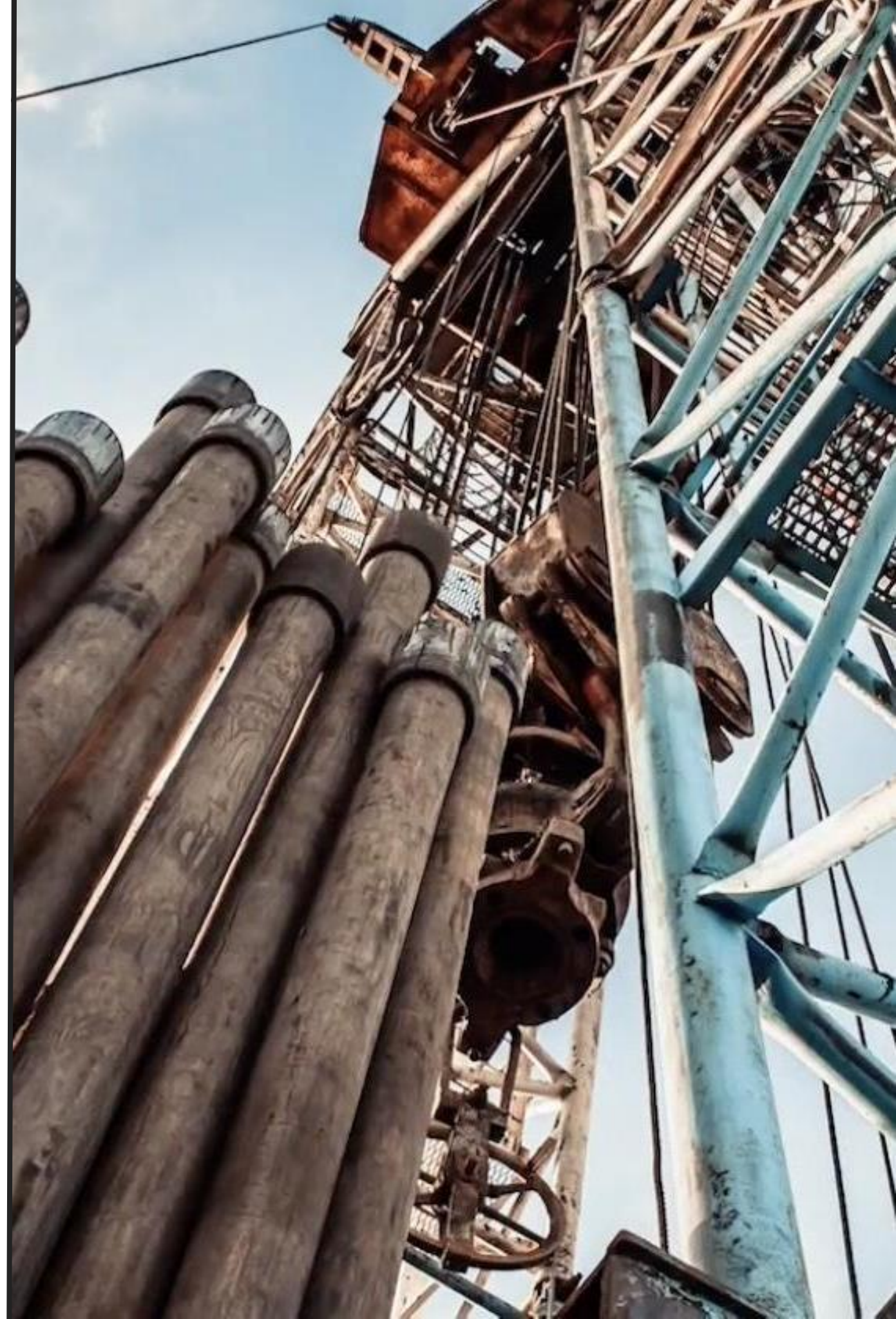




## Clean-RevoTechnology

**The only ecological technology  
that allows the removal of all  
deposits from the surface  
of Oil & Gas equipment,  
offshore and on land.**

[www.iftservices.us](http://www.iftservices.us)





- ❖ IFT Services LLC owns the exclusive rights to use the Clean-Revo Technology and to manufacture the Clean-Revo Technology equipment.
- ❖ We design and manufacture specifically to our customer's needs, in collaboration with the author and owner of the Know-How Mr. Vladimir Pechacek.
- ❖ We provide a custom cleaning service of the Oil&Gas equipment - tubings, drill pipes, ESP+ESP motors+ESP power cable, wells and others.
- ❖ We also offer the ability to purchase the Know-How of the Clean-Revo Technology
- ❖ With a unique chemical-technological solution of the Clean-Revo, IFT Services LLC can apply and deliver the device into operations that are located anywhere in the world.



**Mr. Vladimir Pechacek, Know-How  
author and owner**

# The Clean-Revo Technology



## Any surface

## Chemical - Technological Revolution

## Adaptable, global use

The Clean-Revo Technology makes it possible to clean **any surface** from paraffin, wax, asphalt, cement, resin and corrosion, including and the complete removal of all minerals and radioactive NORM/TENORM type deposits.

At the same time, the Clean-Revo Technology enables the immediate process **separation of non-radioactive waste from radioactive waste** of the NORM/TENORM type, thereby preventing the creation of liquid radioactive waste of this category.

The Clean-Revo Technology represents **reliable, ecological and safe removal of any deposits** from cleaned surfaces **without their emulsification**.

This brings a **chemical-technological revolution** to the removal of NORM/TENORM type radioactive deposits from surfaces of various devices and materials; because during the cleaning process, the radioactive waste is already completely separated from non-radioactive waste.

The Clean-Revo Technology can be used in a wide industrial spectrum. It **can be adapted and used for all techno-genesis processes carried out by Oil & Gas companies worldwide**.

It stands out above all for its reliable automation and simple operation.

# The Clean-Revo Technology



## Ecological advantage

A significant benefit of the Clean-Revo Technology is its **clean and ecological character to the environment.**

It does not produce a liquid radioactive waste and does not damage the cleaned and deactivated surface of the equipment or material.

The cleaned equipment or material always shows background radiation and can be reused without restriction or disposed of safely and environmentally.

## Patented technology

**20 years of research and development** resulted in the creation of this unique Clean-Revo Technology.

**The patent** for the first generation of the Norm Free Technology was issued to the **inventor Mr. Vladimir Pechacek in Kazakhstan in 2003**, as a subject of his long-term cooperation with the **Institute of Nuclear Physics in Almaty, Kazakhstan.**

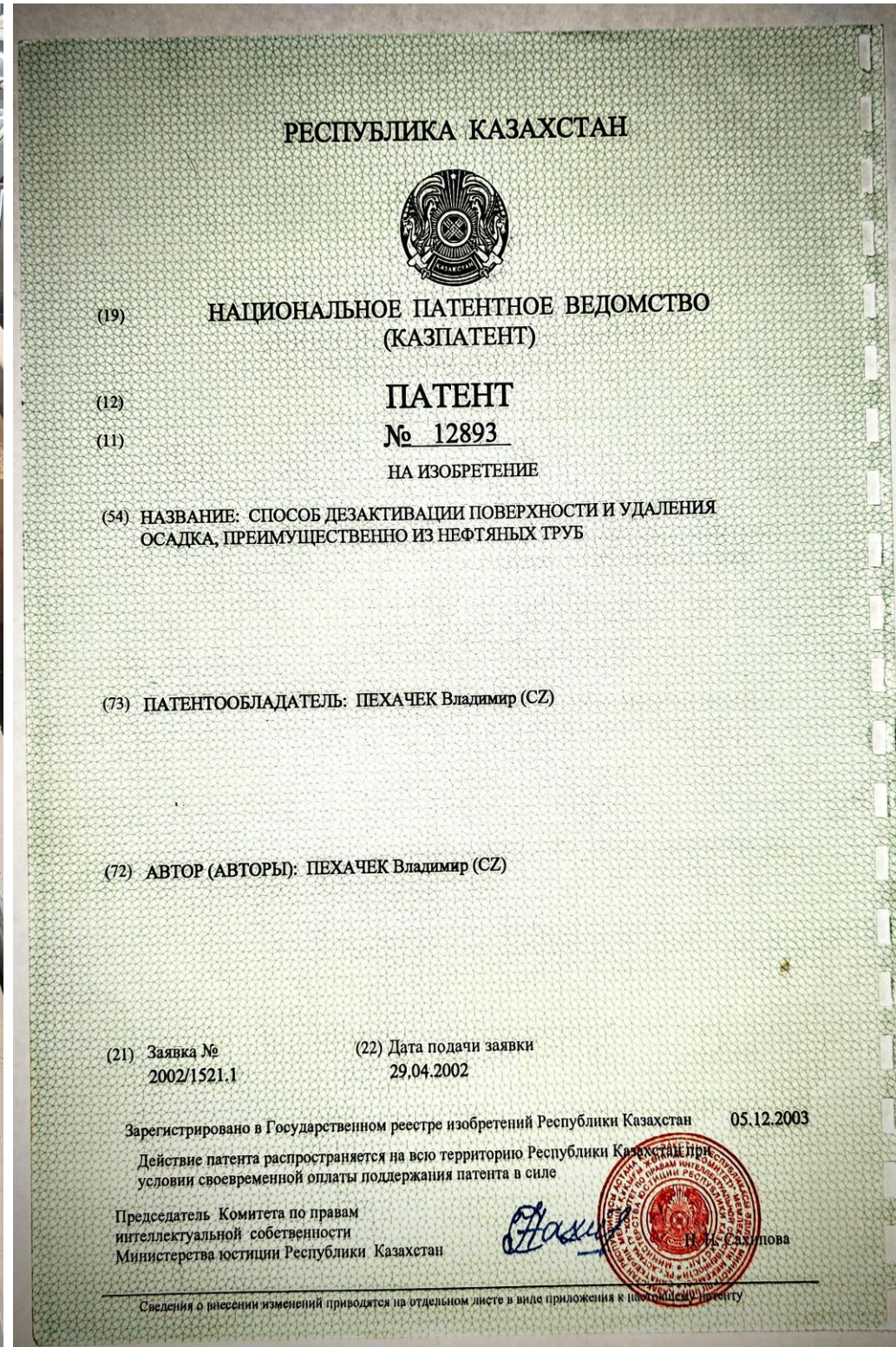
## Global presence and continuous upgrades

In the years 2003-2019 the Norm Free Technology was **implemented in more than 10 countries worldwide**, where it still works successfully today.

In the past three years the Norm Free Technology was modified to increase efficiency in the cleaning and removal of radioactive NORM/TENORM type deposits from the tubing Oil & Gas production known now as the **Clean-Revo Technology.**



# The NORM Free Technology – Patent in Kazakhstan 2003





The basis of all Clean-Revo Technologies is a new generation of water soluble working solutions that are used in cleaning of Oil & Gas equipment and removal of paraffin, corrosion, concrete and mineral or radioactive NORM/TENORM deposits.

Surface cleaning and removal of NORM/TENORM type radioactive deposits is always carried out in special chemical and technological equipment with 3 stages of chemical and technological and hydrodynamic treatment, which achieve in **the Clean-RevoTechnology perfect surface cleaning and 100% removal of paraffin or mineral and NORM/TENORM radioactive deposits.**

**First stage:** The first stage involves the release and removal of paraffins, cement, corrosion, ARWS and common mineral deposits.

**Second stage:** In the second stage all NORM/TENORM type radioactive deposits are released and removed

**Third stage:** In the third stage, the cleaned surface is neutralized and passivated. The metal surface is briefly protected from corrosion.





## The Clean-Revo Technology

### Waste produced by Clean-Revo Technology

The Clean-Revo working solutions IFT- KCD are continuously separated in gravity separators and are constantly filtered during the next chemical-technological process.

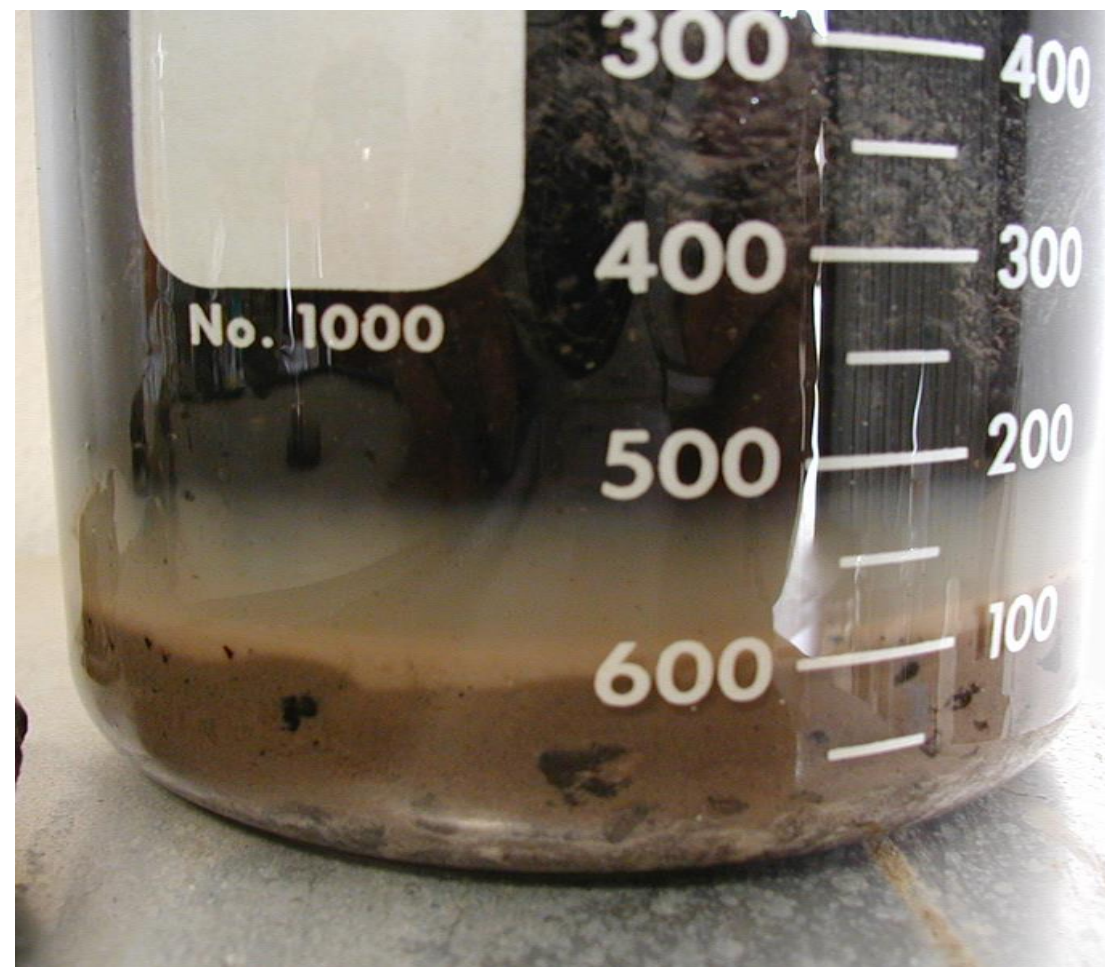
Radioactive NORM/TENORM type waste is reliably captured in separators and NANO filtration. They are already in a solid and insoluble state, ready to be re-injected back underground, or to be stored in an appropriate landfill.

Liquid wastes are not radioactive and after overflowing from the level of the working solutions, they are taken to collection ISO chemical containers for further processing.

The Clean-Revo working solutions IFT- KCD are automatically replenished during their operation to the required chemical efficiency. For this reason, they have a very long life and do not need to be replaced often.

Ordinary slaked lime is used to dispose of the Clean-Revo working solutions, which adjusts the pH of the liquidated working solution to Ph-neutral (Ph7).

After adjusting the Ph, a mushy emulsion is formed, which is further diluted with clean water, and this emulsion can be safely disposed of in any industrial water treatment plant.





## The Alternative “Old Technology”

Methods for cleaning and removing parafin, concrete, asphalt, wax and minerals + NORM/TENORM type deposits from the surface of equipment used in Oil&Gas worldwide are characterized by the use of working solutions in the form of concentrated acids or lye's with various toxic additives.

These outdated working solutions reliably and rapidly absorb impurities and completely dissolve NORM/TENORM type mineral deposits. Surface cleaning and removal of NORM/TENORM deposits with the help of these solutions takes place in such a way that all impurities and radioactive deposits are dissolved and absorbed on the purified surface.

In these chemical reactions on the purified surface, a violent and uncontrollable chemical reaction occurs during which the purified surface is disturbed, dissolved and etched.

As a result of a chemical reaction (using HCL) produces free radical hydrogen. This released hydrogen radical enters the surface structure of the purified material, destroying its structure and strength - Material Hydrogen Embrittlement.

These outdated working solutions result in the continuous and uncontrolled dissolution of hazardous NORM radionuclides. After a short period of activity, this working solution becomes radioactive and inoperable due to its saturation. The working solution can no longer be used.

Disposing of this working solution is very expensive and dangerous and presents an additional and even greater liquid radioactive problem.

**As a result of these facts, old technologies are utterly economically inefficient, exhausting and, above all, dangerous to health and nature.**



## Main Advantages

- ❖ Produced liquid, non-radioactive waste - paraffin + ARWS can be mixed back with crude oil
- ❖ Produced NORM/TENORM radioactive waste is always in a solid and non-water-soluble form and is immediately ready for re-injection underground or for storage in an appropriate industrial landfill
- ❖ Ecologically closed working cycle of chemical and hydrodynamic treatment that has minimal consumption of water and working solutions
- ❖ Guaranteed 100% removal of paraffin, mineral or NORM/TENORM type radioactive deposits from cleaned surfaces - down to background level
- ❖ Cleaned and deactivated surface of the equipment or materials is always undamaged and is immediately ready for reuse or disposal after neutralization and passivation.
- ❖ Up to 97% volume and weight reduction of the NORM/TENORM and ARWS + paraffin waste
- ❖ Very wide application spectrum with the possibility of mobile use
- ❖ Low energy costs - work processes take place at temperatures from 25 to 35 degrees Celsius
- ❖ Quick return on the investment

„ARWS” – Asphalt-Resin-Wax-Substances







## The Clean-Revo Technology

### Possibilities of Use

The Clean-Revo Technology has a very wide range of applications. It can be used to clean and remove all paraffins or deposits including NORM/TENORM type from industrial equipment designed to for extraction, transportation, processing and storage from oil, natural gas and uranium.

#### Example Usage :

Cleaning and removal of all deposits from Oil & Gas tubing

Cleansing and removal of all deposits from ESP systems

Cleansing and removal of all deposits from Coiled Tubing

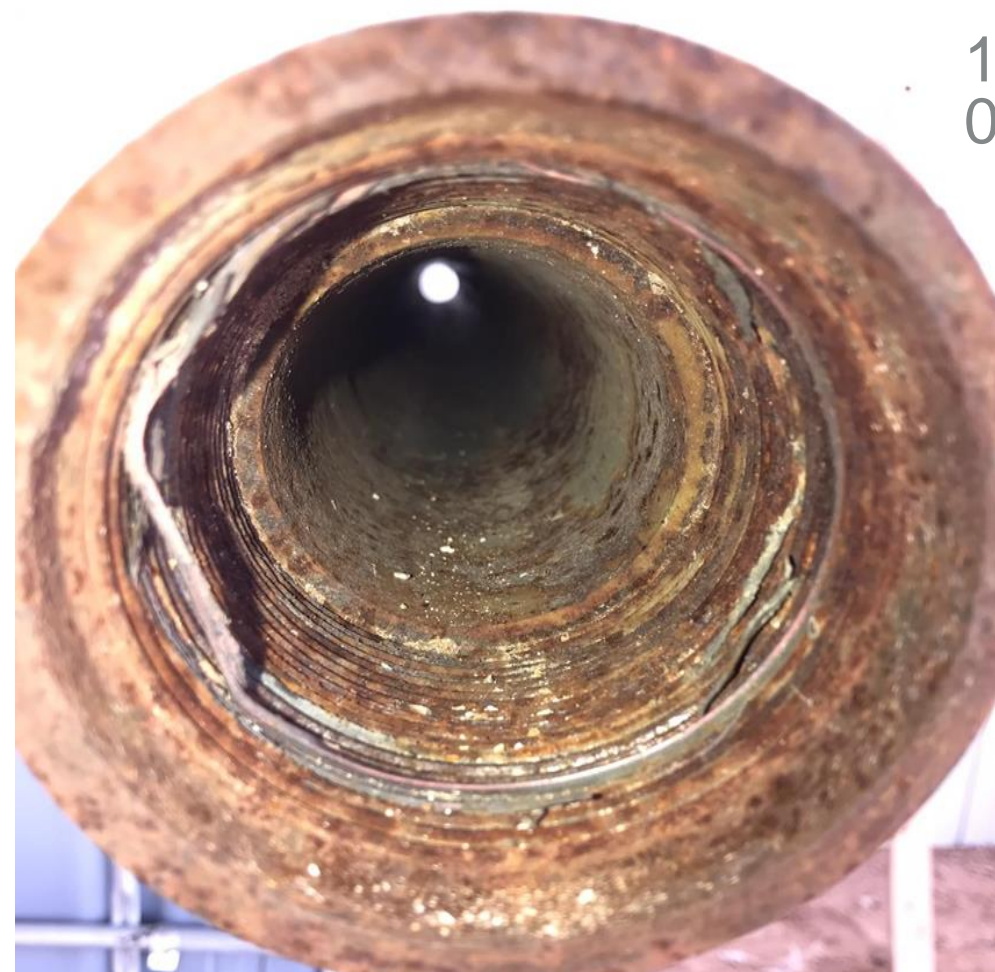
Current offshore oil/gas rig maintenance

Cleaning and removal of all deposits from decommissioned oil platforms including elimination of deposits NORM/TENORM type.

Routine maintenance, cleaning and refurbishment of oil refineries, nuclear power plants, heat exchangers, etc.

Clean - Revo Technology can also be used effectively for cleaning and removing radioactive deposits from military equipment, nuclear submarines and nuclear-powered ships, or parts thereof, subject to decommissioning.

The Clean - Revo Technology special equipment is always made custom according to the customer's requirements.





# The Clean-Revo equipment for Oil& Gas tubings systems



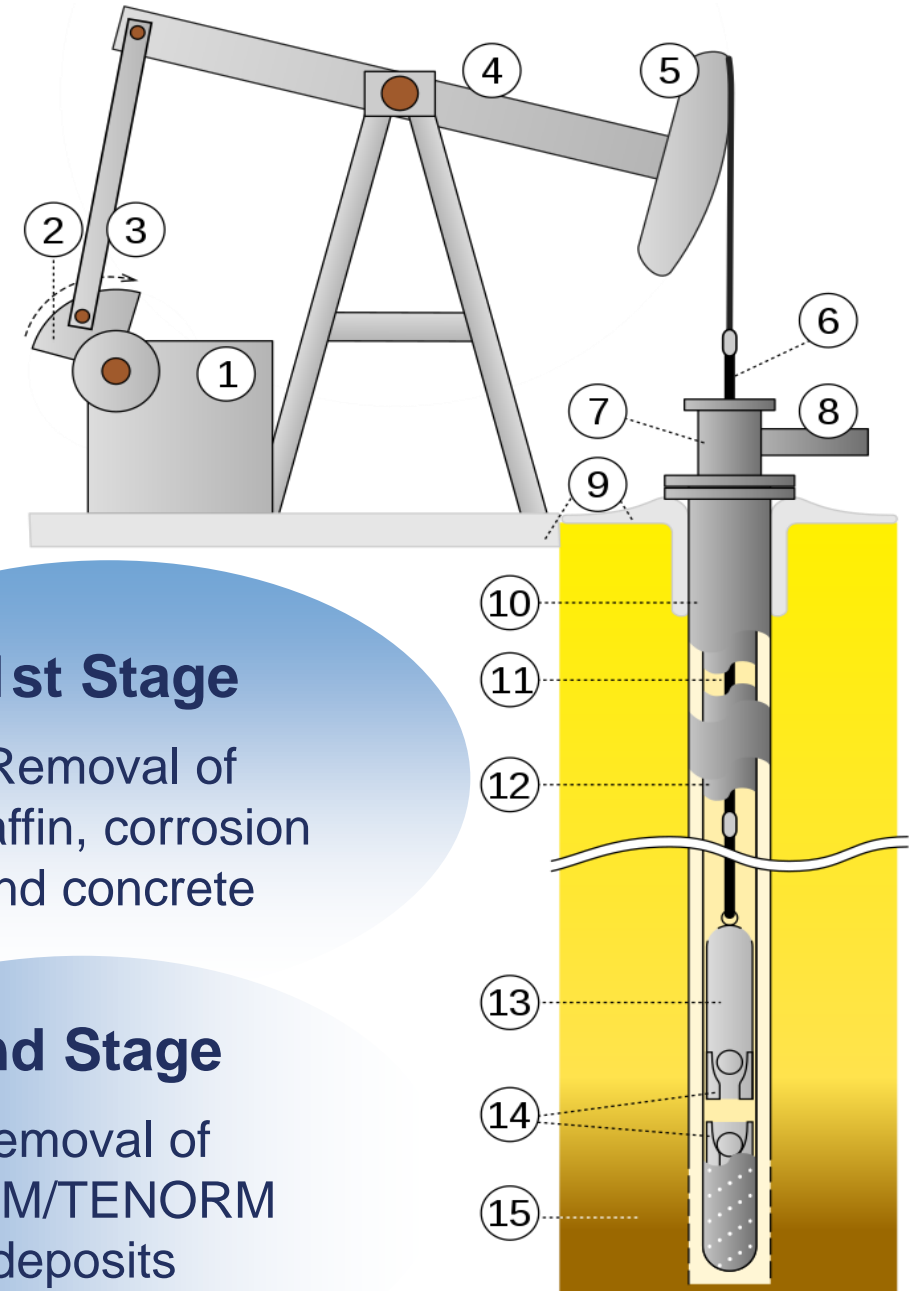
The Clean-Revo Equipment, is currently the only, proven and effective equipment of its kind in the world that can safely and environmentally remove All deposits included NORM/TENORM type radioactive from the surface of tubing used in oil and gas extraction.

The Clean-Revo Technology differs from other technologies by operating in a closed, ecological, chemical-technological work cycle that does not produce NORM's liquid, radioactive waste. The Clean-Revo facility has a unique design that guarantees a minimum consumption of water, electrical power and working solutions.

The Clean-Revo Technology enables multiple chemical-technological and hydrodynamic operations to be performed simultaneously.  
The Clean-Revo equipments is only manufactured in container form for re-assembly and disassembly anywhere in the world and in all climatic conditions  
The lifetime of the equipment is up to 20 years, depending on the implementation, with a 12-month guarantee.

Factory production is always preceded by a Feasibility Study. In the Feasibility Study, all customer requirements are taken into account for the perfect cleanup and removal of All deposits including NORM/TENORM type radioactive from tubing.

All technical, operational and economic conditions are assessed, depending on the location and the way the customer operates the Clean-Revo of the equipment.  
Based on the above, the final financial budget of the Clean-Revo is created, which is final and binding on all Contracting Parties.



**1st Stage**  
Removal of paraffin, corrosion and concrete

**2nd Stage**  
Removal of NORM/TENORM deposits

**3rd Stage**  
Neutralization and pasivation of the tubing surface (the short-term preservation)



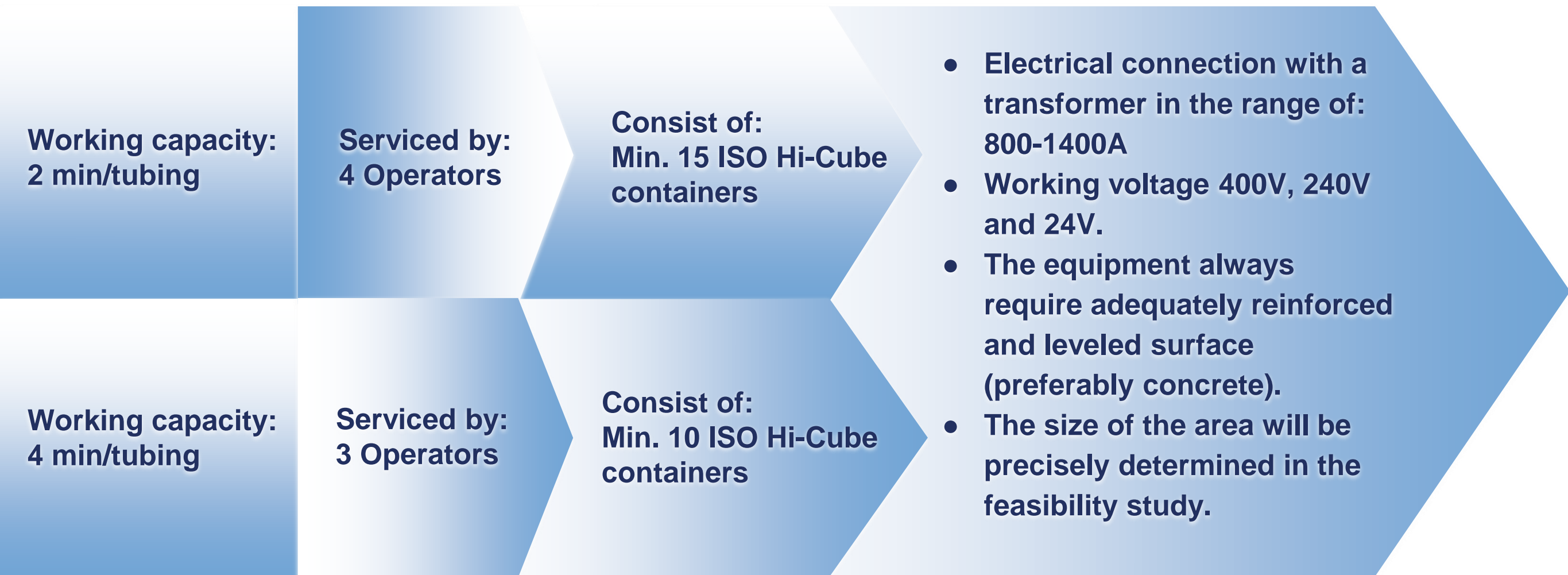
# The Clean-Revo Compact Equipment



## Introductory/baseline technical parameters

The Clean-Revo Compact **"All-in-one"** equipment is fully autonomous with its own generator

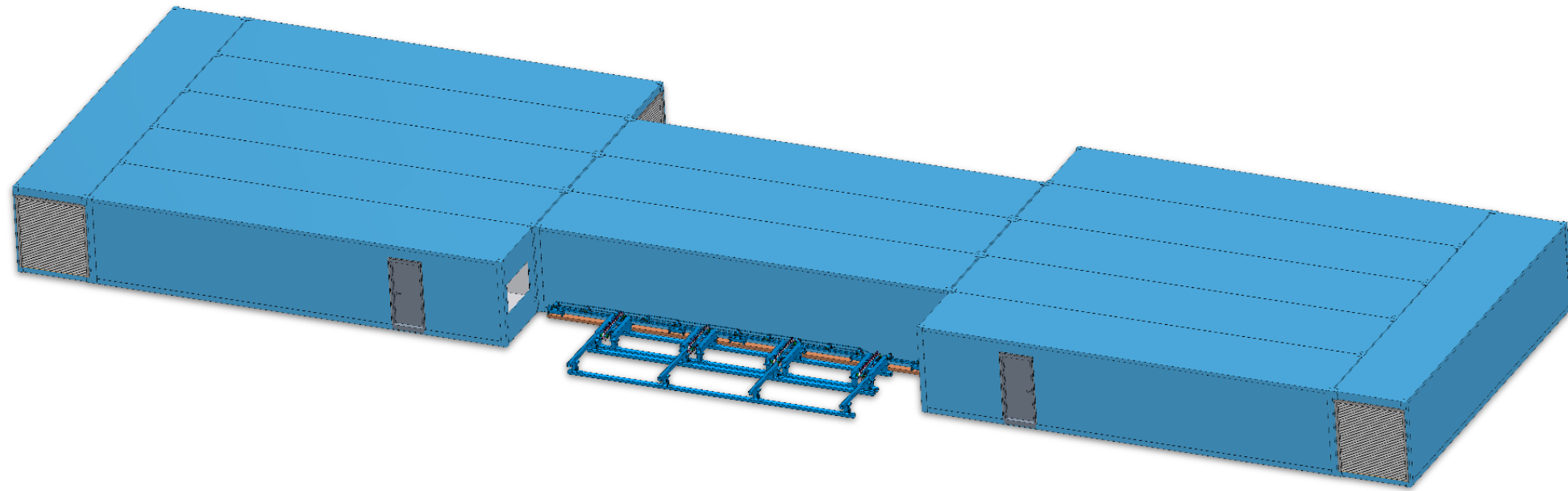
It is designed to emit 1 clean non-radioactive tubing every 2 or 4 minutes.



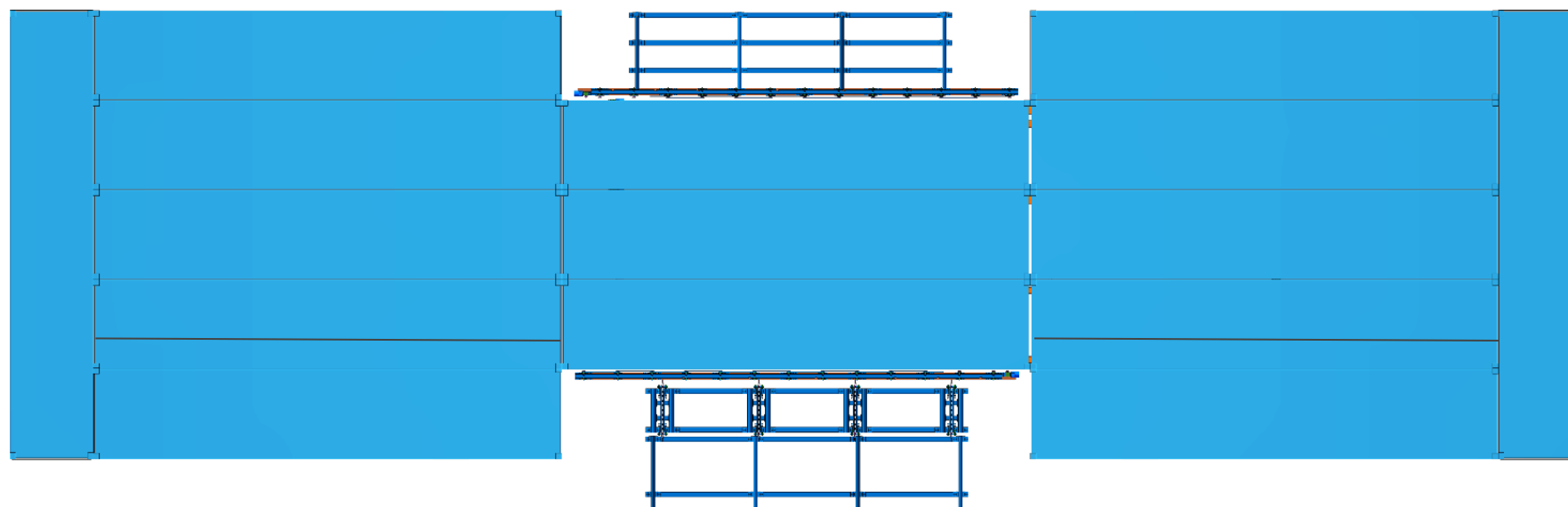


# The Clean-Revo Equipment

IFT REVOX - DUPLEX - 2 min/tubing



↑ Output of tubing

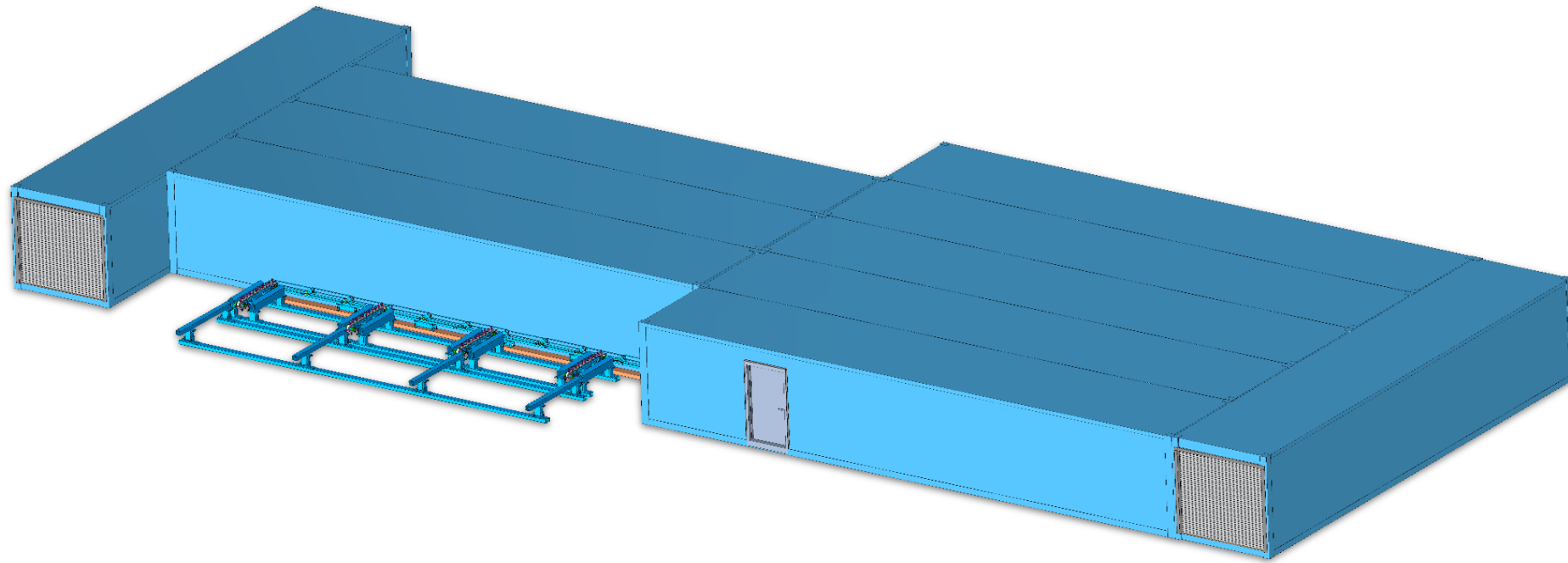


↑ Input of tubing

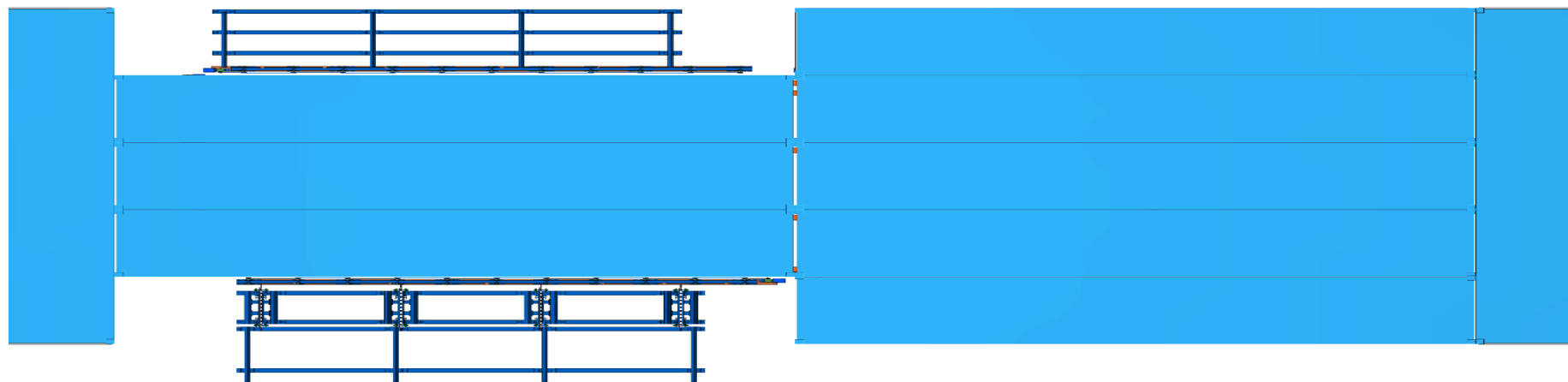


# The Clean-Revo Equipment

IFT REVOX - 4 min/tubing



↑ Output of tubing



↑ Input of tubing



## The basic operating and economic indicators for Oil&Gas tubings systems

This economic calculation budgets are valid for the basic equipment level of the IFT REVOX, which produces **one clean tubing every 4 minutes** with the following operational and technical parameters:

The diameter of the tubing to be cleaned in this equipment is:

60mm – 2 3/8” or 73mm – 2 7/8” or 89mm – 3 1/2”  
with and maximum tubing length of 10.6 m - 35ft.

The working hours - for this basic modification of the IFT - REVOX, are calculated to be a maximum of 10 working hours per day, 5 working days per week, 20 days per month and 240 days per calendar year, which approximately amounts to 2.400 working of hours per calendar year.

Approximate annual production  $2.400 \times 15 = 36,000$  tubing per calendar year.

Damaged, clogged or bent tubing cannot be cleaned.

Higher levels of equipment and performance of the IFT – REVOX system can only be purchased on the basis of an individual Feasibility Study.

### **Economic calculation indicators for the basic equipment level of the IFT - REVOX described above:**

IFT- KCD concentrate consumption: 0.15 - 0.20 kg/tubing

Price of 1 kg of IFT- KCD concentrate: \$45

IFT- N concentrate consumption: 0.1 - 0.15 kg/tubing

Price of 1 kg of IFT- N concentrate: \$37

Electricity consumption: 15 - 22 kWh/tubing

Water consumption: 3 - 5 liters/tubing

Diesel consumption: 0.5 -1.5 liters/tubing



The service life of the equipment is up to 20 years, depending on the design chosen by the customer and the materials used.

The equipment can be adapted to any climatic conditions - on land and at sea.

The warranty period for the equipment is 12 months from the date of commissioning - no longer than 18 months from its acceptance with delivery parity Ex Works according to Incoterms 2020.

Delivery of machinery is EXW Czech Republic.

Delivery of chemical solutions is EXW Texas.

The price of the equipment includes a 3-week training of the customer's engineering specialists. The training is completed by a certification exam and the issuance of a certificate on the competence of the customer's engineering specialists to assemble or disassemble the equipment, and to operate, maintain and repair the equipment. Engineering specialists are authorized to train and certify other engineering specialists and customer personnel to operate the Clean-Revo equipment.

The equipment is designed only for one standardized tubing diameter. It is possible to purchase a conversion kit for tubing of other standardized dimensions and clean other tubing with other standardized diameters.

We provide warranty and post-warranty service anywhere in the world.

The basic operating and economic indicators for Oil & Gas tubing systems have been calculated from the implementation of previous equipment Clean-Revo deliveries. These indicators, provided by the manufacturer, are non-binding and will always vary according to the customer's local economies and industrial conditions.

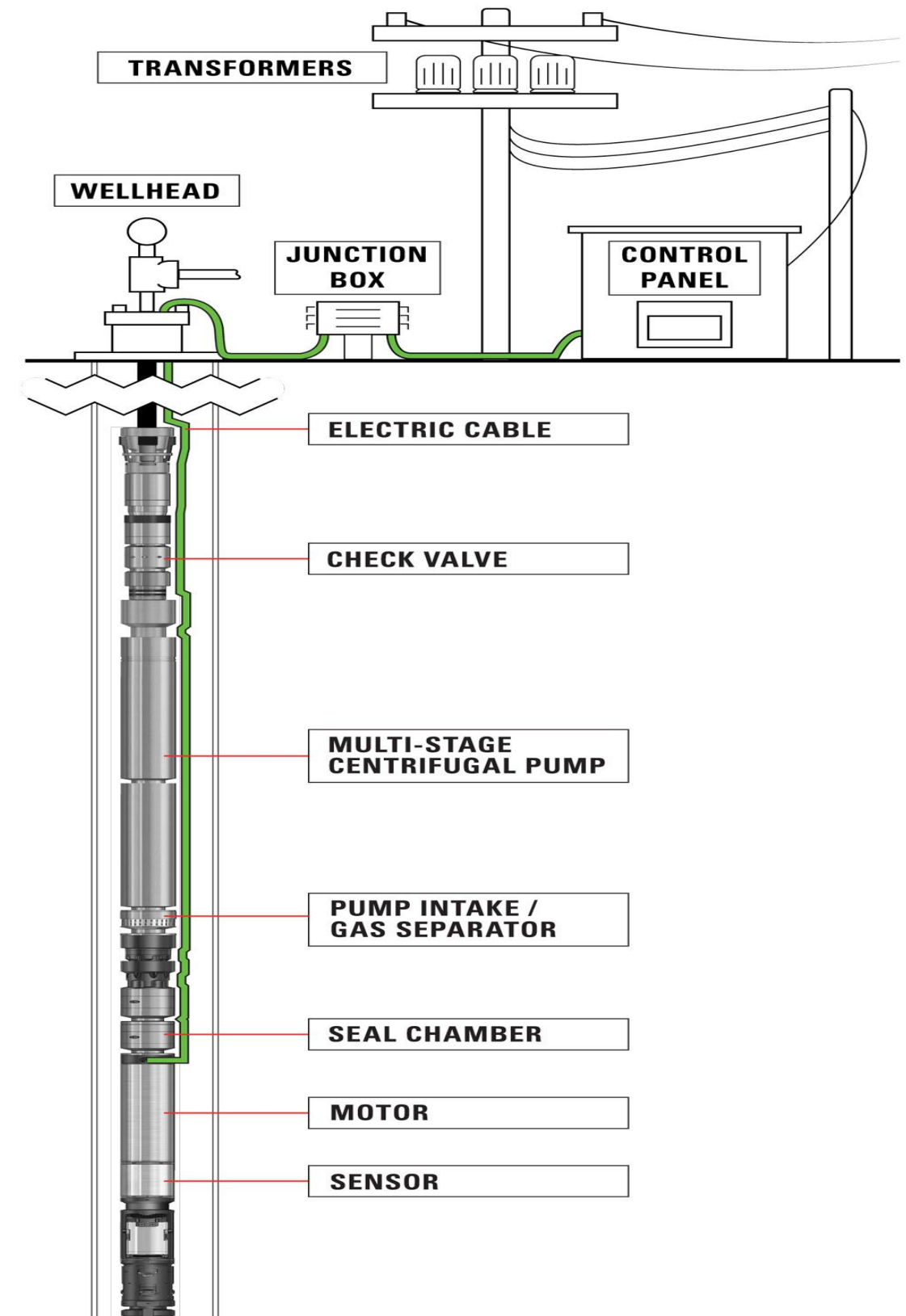
The additional and custom made modifications are available at further costs with respect to further Feasibility Study.



# The Clean-Revo equipment for ESP systems

## CLEANING ESP & ESP Motor & ESP power cable EQUIPMENT

- A compact equipment specialized in cleaning of ESP & ESP motor
- It can clean 1 ESP/3-9hr and 1 ESP motor/3hr
- ESPs are cleaned internally and externally
- The equipment consists of 6 ISO Hi-Cube containers
- It is designed for ESP & ESP motor, 3-5 inch in diameters and for ESP with a max. length of 35 ft
- Additionally, this equipment can be quickly assembled and disassembled within 3-5 days.
- Filtration and regeneration functions are on site
- The operation is straightforward, using forklifts for inserting and removing ESP and ESP motors



# The Clean-Revo equipment for ESP systems

## CLEANING ESP & ESP Motor EQUIPMENT

### Unit of separation, filtration and tanks

It serves to store, filter and regenerate the chemical solution.

### Exit control unit

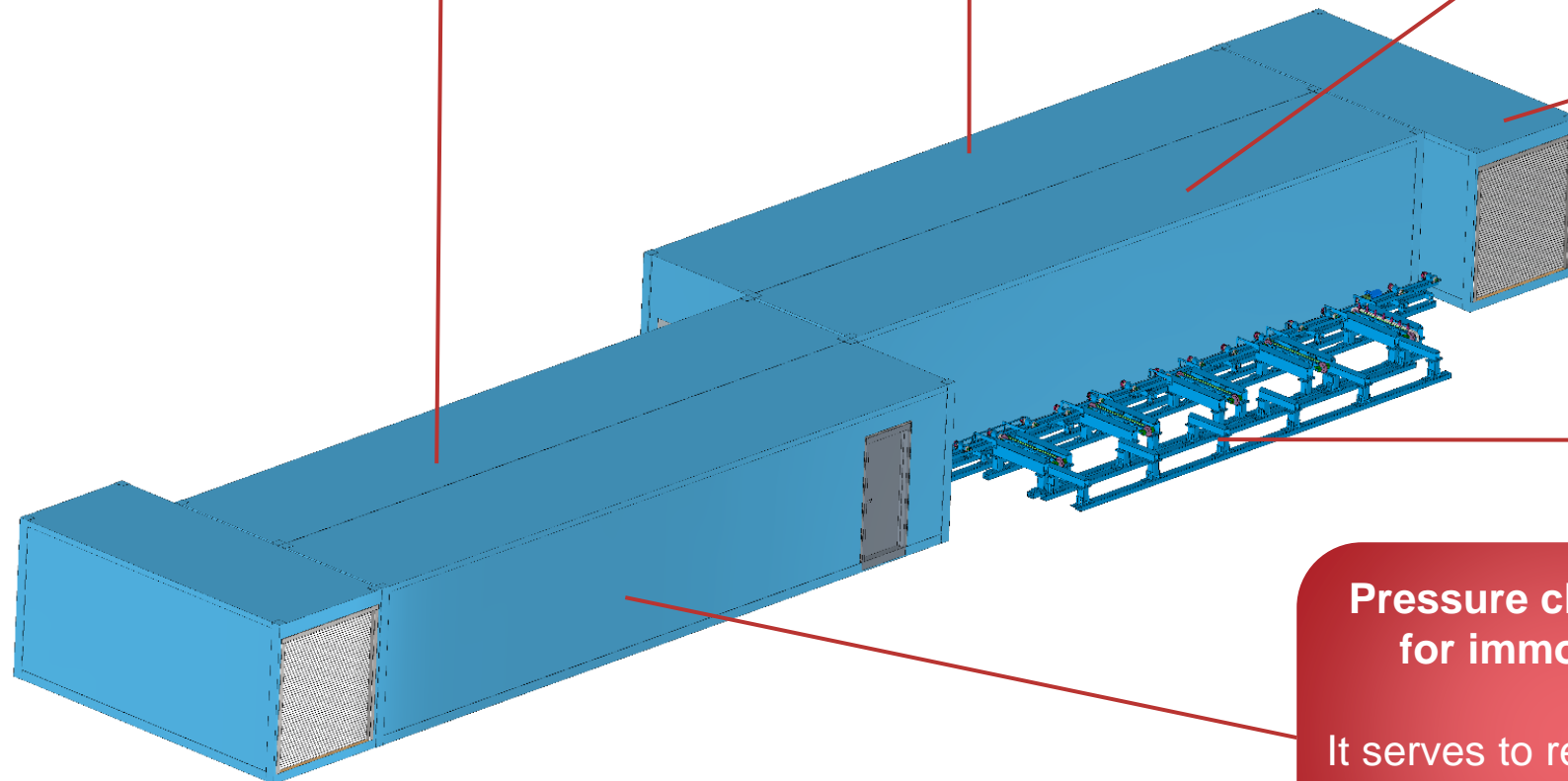
It serves for control of the cleaning equipment at the final stage. It contains a workstation for the operator.

### Cleaning equipment

It contains facilities for manipulation and cleaning of ESP.

### Unit of separation, filtration and tanks

It serves to store, filter and regenerate the chemical solution.



### Input facility

It consists of input chute and conveyor. The entry conveyor takes ESP and gradually moves it into the cleaning line.

### Pressure cleaning unit for immobile ESP

It serves to release the rotary unit of immobile ESP.



# The Clean-Revo equipment for ESP systems



## BEFORE

Input ESP equipment is contaminated with **paraffin, concrete, corrosion, and NORM/TENORM radioactive deposits**. The ESP equipment can be heavily contaminated with **radiation often exceeding 800 µR/hr**. The cleaning equipment is designed to clean ESP equipment of all standardized diameters.



## AFTER

After completing our cleaning process, the ESP equipment is clean, with a **significant reduction in radiation levels to values below 20 µR/hr**. The result of our process is an ESP equipment that is not only **free from undesired deposits** but also **preserved against further corrosion**. The ESP equipment is **ready for further use** or for **environmentally-friendly disposal**.



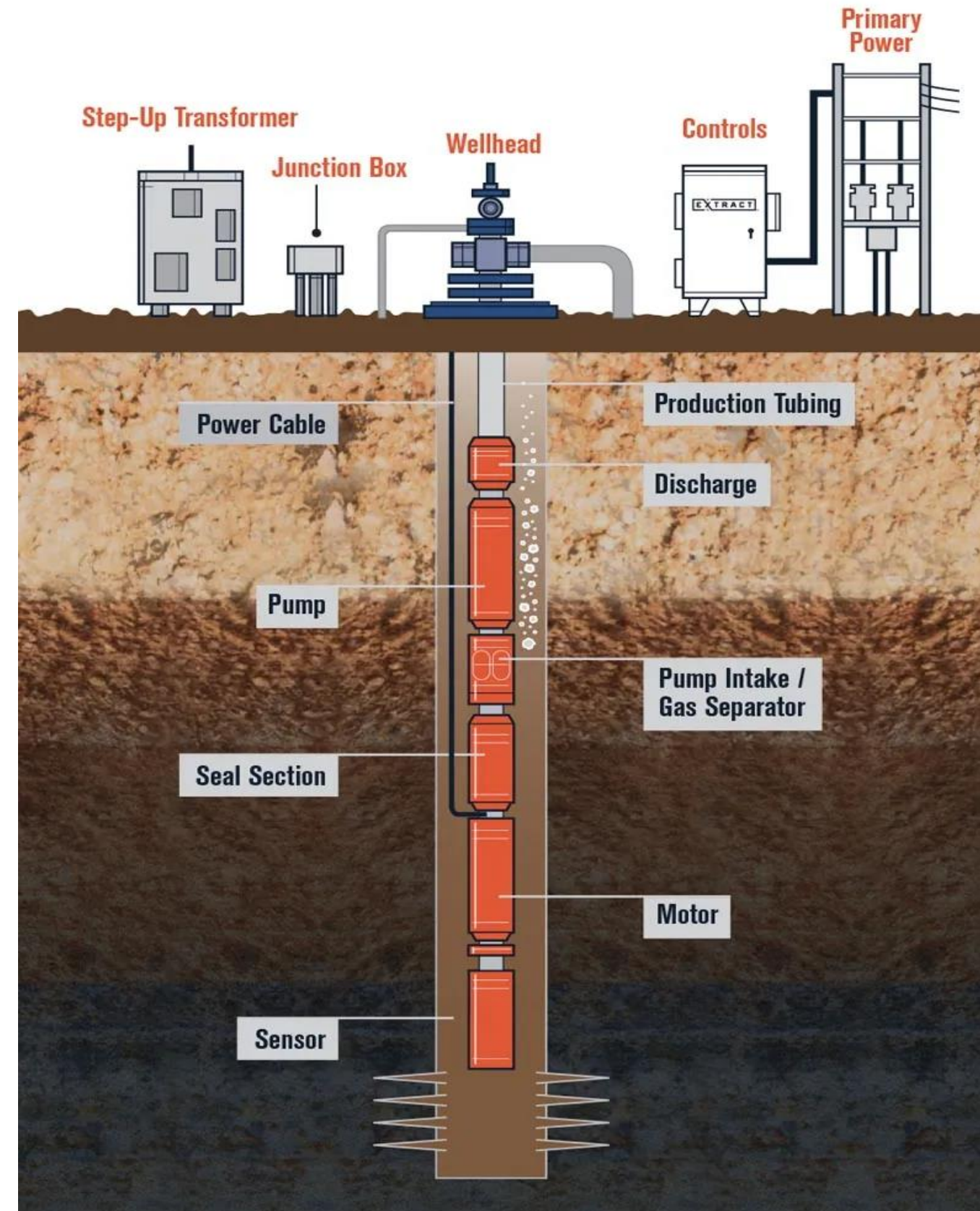
# The basic operating and economic indicators for ESP systems

The sum for the Clean-Revo ESP system:

➤ basic equipment level

- **IFT-KCD** concentrate consumption: 0.05 - 0.10 kg/1ft of ESP Motor  
Price of 1 kg of IFT-KCD concentrate: \$45
- **IFT-N** concentrate consumption: 0.10 kg/1ft of ESP and Motor  
Price of 1 kg of IFT-N concentrate: \$37
- **Electricity** consumption: 3 - 5 kW/1ft of ESP and Motor
- **Water** consumption: 0,5 liters/1ft of ESP and Motor
- **Diesel** consumption: 0.1- 0,5 liters/1ft of ESP and Motor

The equipment is capable of working for a of **240 - 300 days/1 yr**





## The basic operating and economic indicators for ESP systems

- The service life of the equipment is up to 20 years, depending on the design chosen by the customer and the materials used.
- The equipment can be adapted to any climatic conditions for work anywhere on land and at sea.
- The warranty period for the equipment is 12 months from the date of commissioning, no longer than 18 months from its acceptance with delivery parity Ex Works according to Incoterms 2020.
- Delivery of machinery is EXW Czech Republic.
- Delivery of chemical solutions is EXW Texas.
- The price of the equipment includes a 3 weeks training of the customer's engineering specialists. The training is completed by a certification exam and the issuance of a certificate on the competence of the customer's engineering specialists to assemble or disassemble the equipment, and to operate, maintain, and repair the equipment. Engineering specialists are authorized to train and certify other engineering specialists and customer personnel to operate the equipment.
- The equipment is designed for an ESP + ESP MOTOR with a diameter of 3-5 inches. In case of usage of equipment of other diameters, a conversion kit must be purchased.
- We provide warranty and post-warranty service anywhere in the world.
- **The indicators have been calculated from the implementation of previous equipment deliveries. These indicators, provided by the manufacturer, are non-binding and will always vary according to the customer's local economies and industrial conditions.**
- Individual indicators may vary depending on customer requirements, local economics and economic conditions.

# The Clean-Revo Mobile Equipment for cleaning Coiled tubing

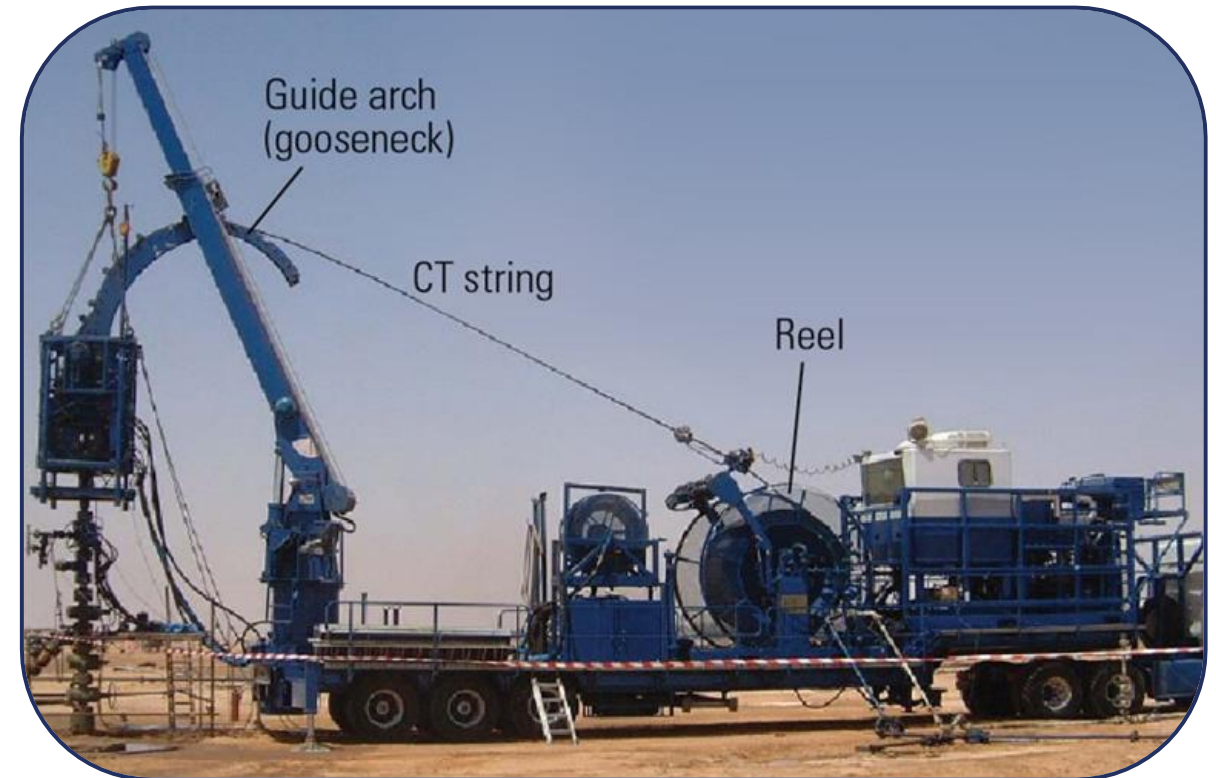
## CLEANING COILED TUBING

The mobile equipment for cleaning coiled tubing is located in 4 ISO HI-Cube containers.

For coiled tubing - **The entire length** and **only the inner side** of the coiled tubing is cleaned.

There is **no need to cut the Coiled tubing into small pieces.**

The cleaning time for coiled tubing in a length of **13,500 ft** is usually **3 to 4 days.**





# Step-by-step Project Progress



## Order Agreement

Initiate discussions to finalize the terms of the order. We will work closely with you to ensure all specifications are understood and agreed upon.

## Feasibility Study

Our team will visit your location, process all your requirements, suggest the most optimal solution, and establish a timeline and budget for the project.

## Contract Signing

Formalize the agreement by signing the order document. This ensures mutual understanding and commitment to the project deliverables and milestones.

## Design & Engineering

Our experts will develop a detailed structural solution for your needs. Advanced tools and software are utilized to ensure precision and compatibility with your requirements.

## Manufacturing & Commissioning

We start the manufacturing process, bring the machine to life, and present it for your approval. Quality checks are conducted throughout the machine to ensure it meets industry standards.

## Delivery of the Product

The machine is transported to your specified destination and set up for automatic operation. Our technicians will ensure the machine integrates seamlessly with your existing infrastructure and operations.

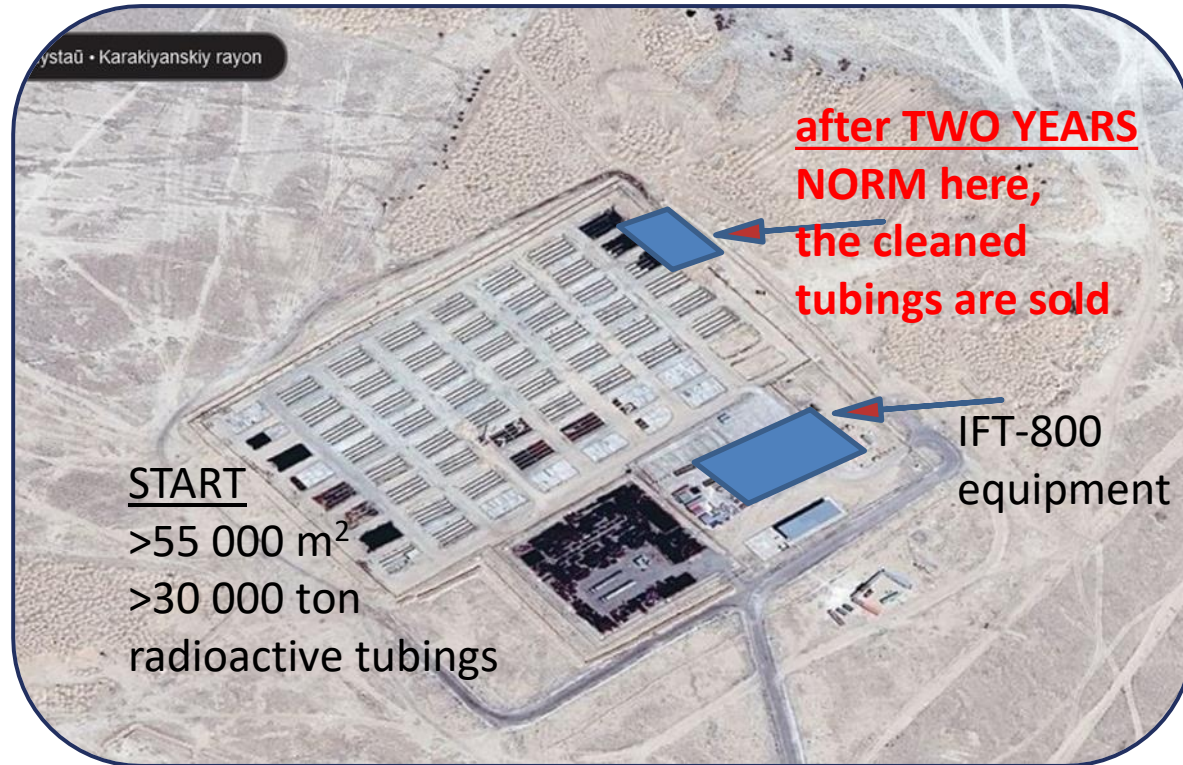
## Service & Maintenance

We offer comprehensive machine servicing at your location for a year after installation. Regular check-ups, updates, and necessary repairs will be carried out to ensure optimal machine performance.

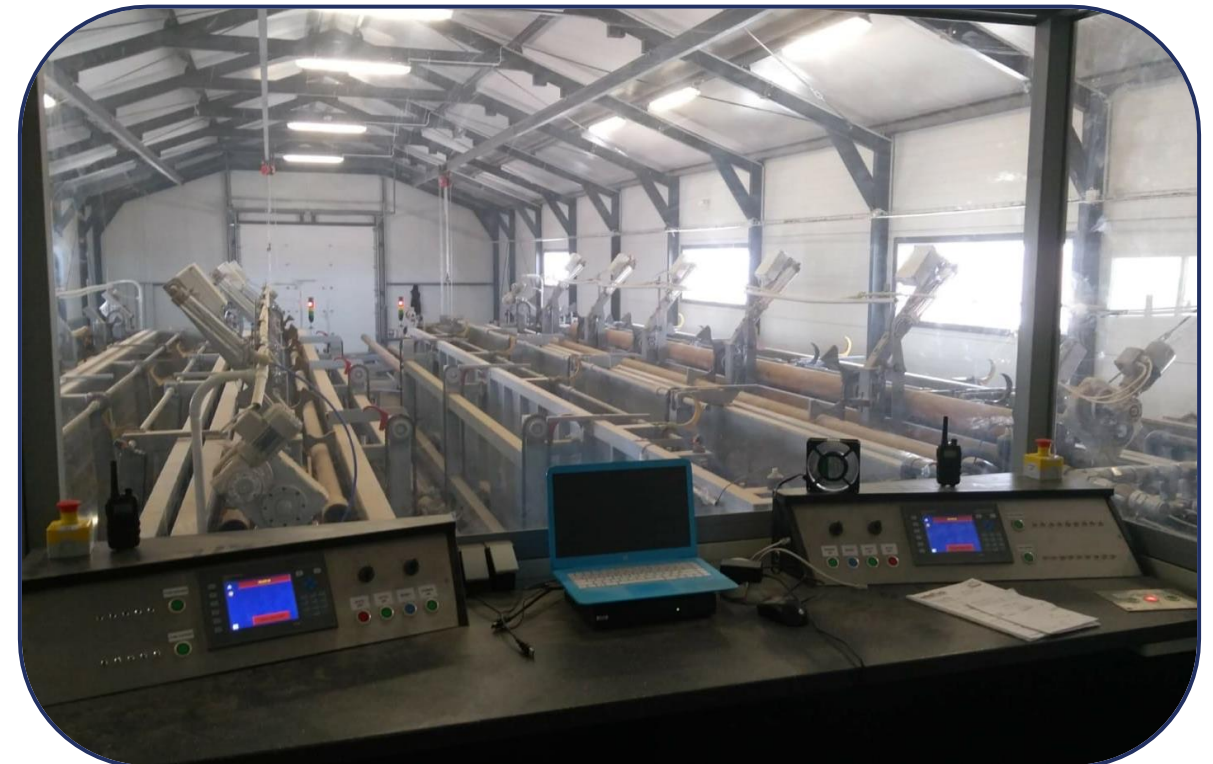


# The Clean- Revo references

## KAZAKHSTAN



## KUWAIT





# The Clean - Revo References

## TEXAS





# The Clean - Revo References



- ❖ **PETROENERGY, Kuwait** - cleaning and deactivation of tubing and ESP systems
- ❖ **DALTON TRADE, Australia** - sale of Know-How for the regional use of NORM Free Technology
- ❖ **HYDRO-CON, Texas** - cleaning of Oil & Gas tubing for Exxon Mobil
- ❖ **KAZATOMPROM, Kazakhstan** - cleaning and deactivation of railway tanks
- ❖ **KUWAIT OIL COMPANY, Kuwait** - sale of NORM Revo equipment for regional use
- ❖ **MID-WEST TRUCK CENTER, Texas** – Oil & Gas tubing cleaning for Oxy and Exxon Mobil
- ❖ **PARK OF NUCLEAR TECHNOLOGIES, Kazakhstan** - sale of Know-How for regional use
- ❖ **PETRONAS, Malaysia** - cleaning and deactivation of offshore oil platforms
- ❖ **ROSS ATOM FLOT, Russia** - cleaning and deactivation of fuel containers of atomic submarines and icebreakers
- ❖ **SHELL, Venezuela** - cleaning of large-capacity underground and above-ground storage tanks and collectors
- ❖ **SOSNOVY BOR, Russia** - cleaning and deactivation of stainless steel and titanium equipment of a nuclear power plant
- ❖ **WESTERN EMIRATES, United Arab Emirates** - cleaning and decontamination of tankers





# Our team



**Vladimir Pechacek**  
Owner



**Arman Markashov**  
Legal Representative



**Marek Hunar**  
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**Alex Johnson**  
Sales Manager



**Dusan Mitrik**  
Technical Manager



**Pavel Nedvidek**  
Account Manager



**Vladimir Turek**  
Sales Manager