

TAU INVEST SOLUTIONS PRESENTS

# Chlor-Alkali Chemical Complex

Kazakhstan – China · 2026

A phased chlorine-chemistry investment: water-treatment chemicals, disinfectants and pesticides for Kazakhstan and export markets — without the heavy CAPEX of a PVC scheme.

**\$500 K**

starting CAPEX

**18 %+**

IRR, worst-case

**2 yrs**

to expansion phase

**\$70 M**

full-scale phase 3



# Chlor-alkali without PVC — lean entry, scalable core

- The most common chlor-alkali business scheme is “caustic soda + PVC”, because PVC is a very needed and very profitable product.
- However, this scheme's CAPEX is very high — and without PVC the project needs chlorine utilization.
- Chlorine uses are mostly in the water-treatment chemicals business, but not limited to it.

**Start in a few months**

market entry with imported generators

**Starting CAPEX \$500 K**

pre-feasibility, R&D and go-to-market

**Expansion in 2 years**

local manufacturing and full complex

**Low or no competition**

in the region

**Low CAPEX & OPEX**

at start — but scalable

**Easy go-to-market**

strategy

**Government support**

for private investors

# Four product lines from one chlorine core

NaOH

NaClO<sub>2</sub>

NaOCl

Cl<sub>2</sub>

## Soap-cleaning & detergents

Partnership with big players (Synergetic, GLASS) · selling chemicals to the partners

## Feed additives

Partnership with big players · pre-mixes production · export potential

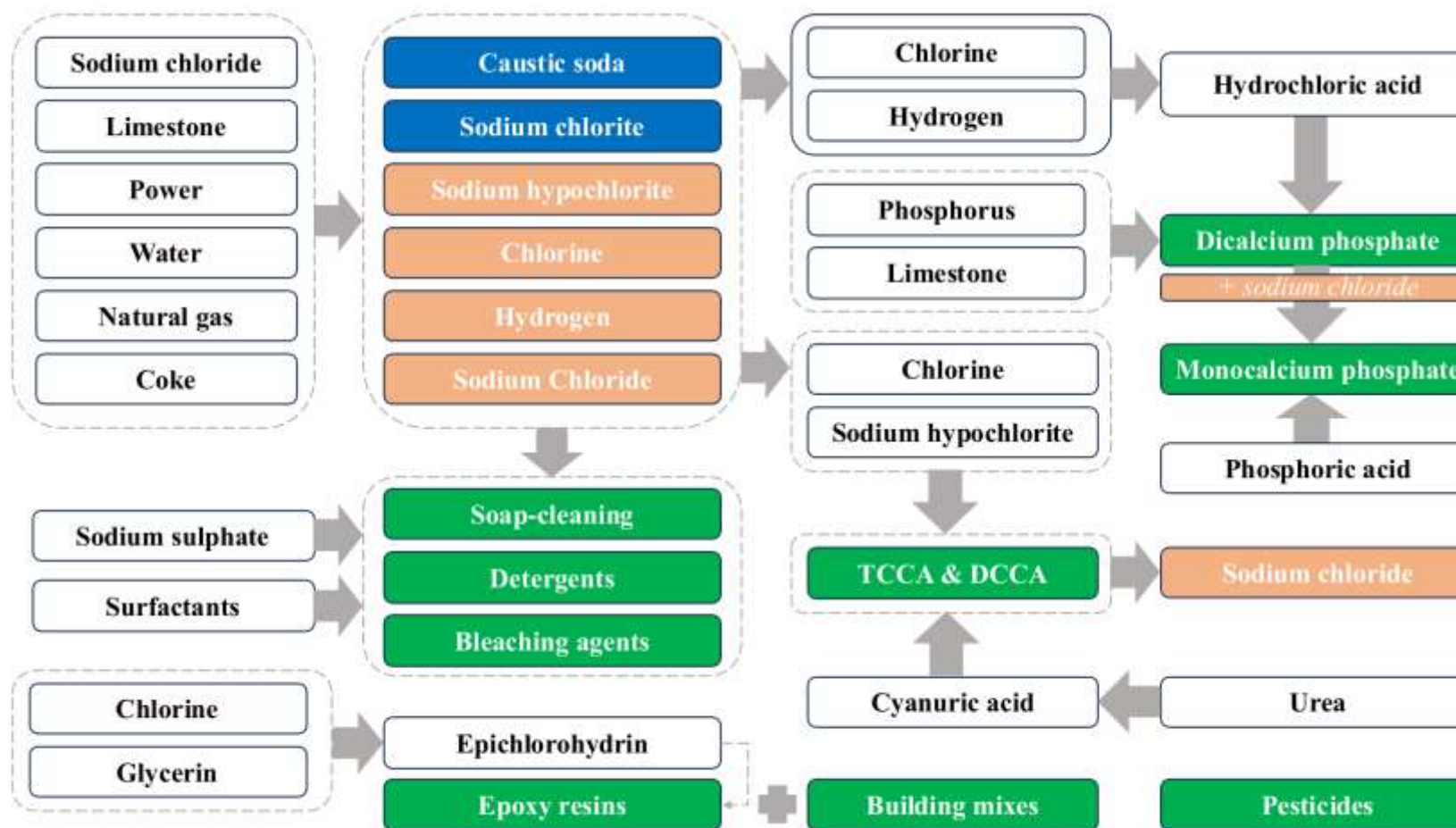
## Water treatment

Disinfectants · sales + chemicals supply + service of chlorine dioxide and sodium hypochlorite generators · sales + chemicals supply + service of “Johkasou” systems

## Pesticides

Mostly herbicides made of chlorine

# Wide product range scheme — with no PVC



## Reading the scheme

### Raw materials

sodium chloride, limestone, power, water, natural gas, coke

### General products

caustic soda, sodium chlorite

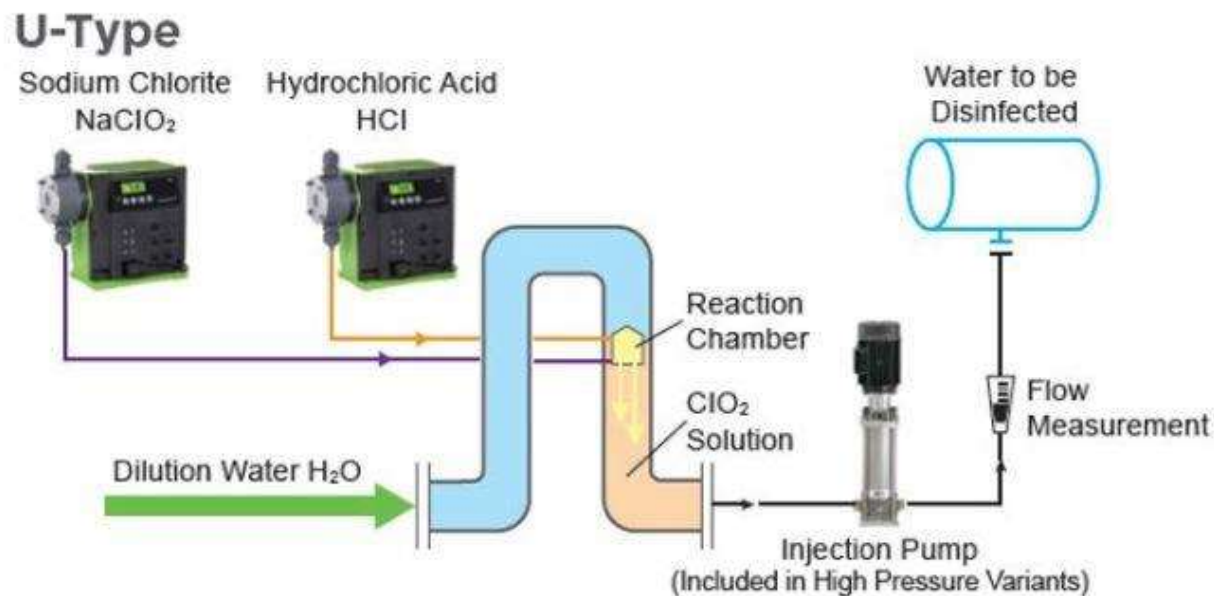
### By-products

sodium hypochlorite, chlorine, hydrogen

### Value-added

detergents, TCCA & DCCA, phosphates, epoxy resins, pesticides

# Chlorine dioxide — generators and tablets

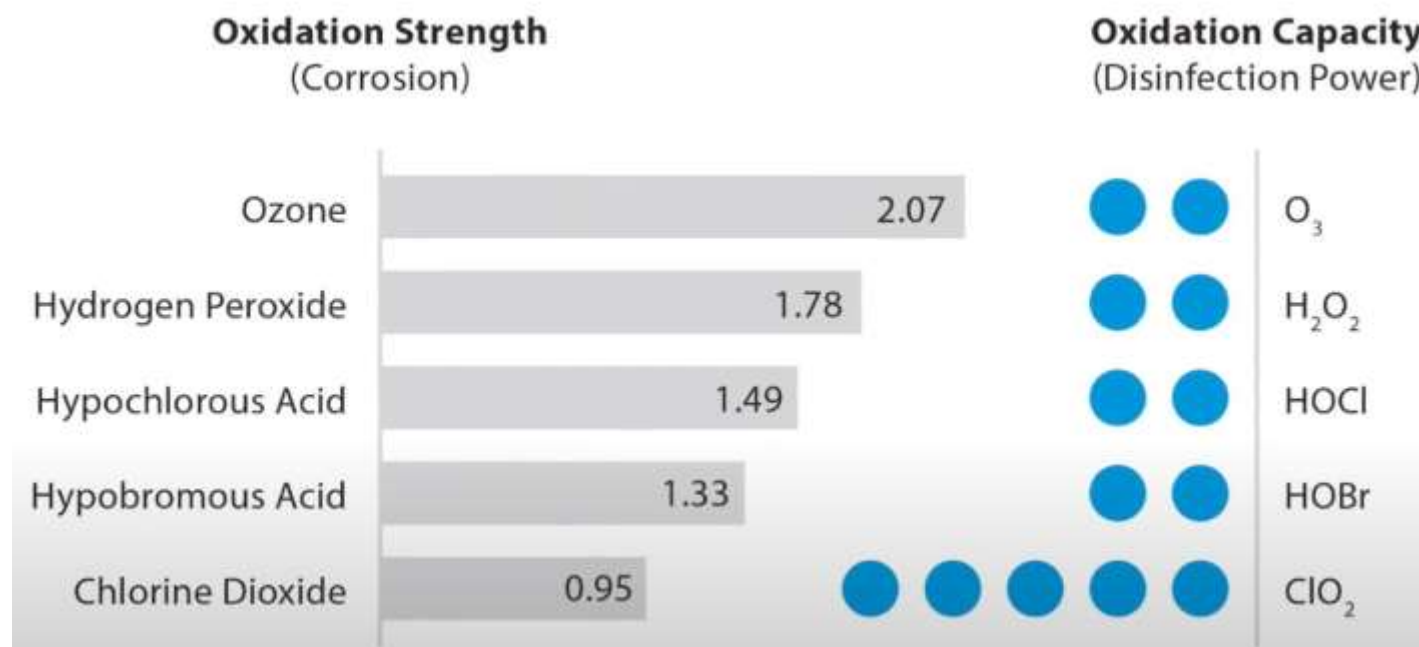


U-type generators — different capacities, included injection pump in high-pressure variants

ChloroSan tablets and granules — a stable, long-storage form of chlorine dioxide

Portable & wastewater treatment consumers: city facilities & civil safety · ponds & pools · food industry & agriculture · oil & gas industry · hospitals & other medical facilities · schools & universities · HoReCa

# Strong disinfection power, low corrosion



Oxidation strength (corrosion) vs oxidation capacity (disinfection power): chlorine dioxide combines the lowest corrosion index (0.95) with the highest disinfection capacity

## Why chlorine dioxide

- Easy go-to-market strategy
- Hygiene-sensitive consumers
- Low CAPEX & OPEX
- Low competition
- Wide range of consumers



# Consumers across hygiene-sensitive sectors



**Hospitals & medical**



**HoReCa**



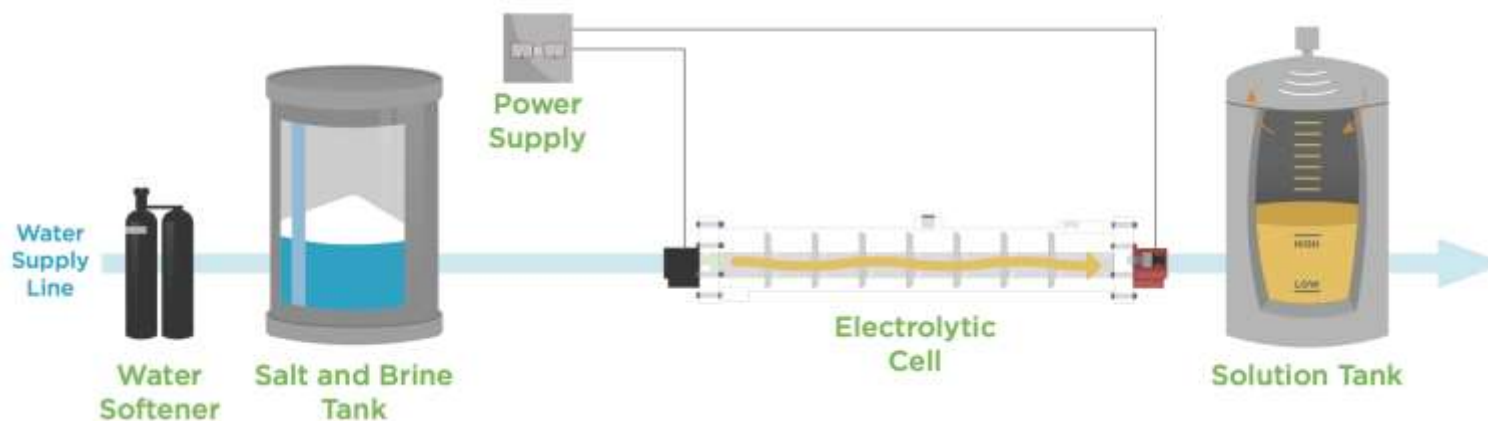
**Schools & universities**



**Swimming pools & sport centers**

Stable tablets and on-site generators let one product serve hospitals, schools, HoReCa, municipal facilities and industry — with recurring revenue from chemicals supply and service.

# Sodium hypochlorite — on-site generation



Water supply line → water softener → salt & brine tank → electrolytic cell (power supply) → solution tank

## Features

On-site generation using sodium chloride, water and power · low CAPEX & OPEX · fast installation & commissioning (container type)

## Use

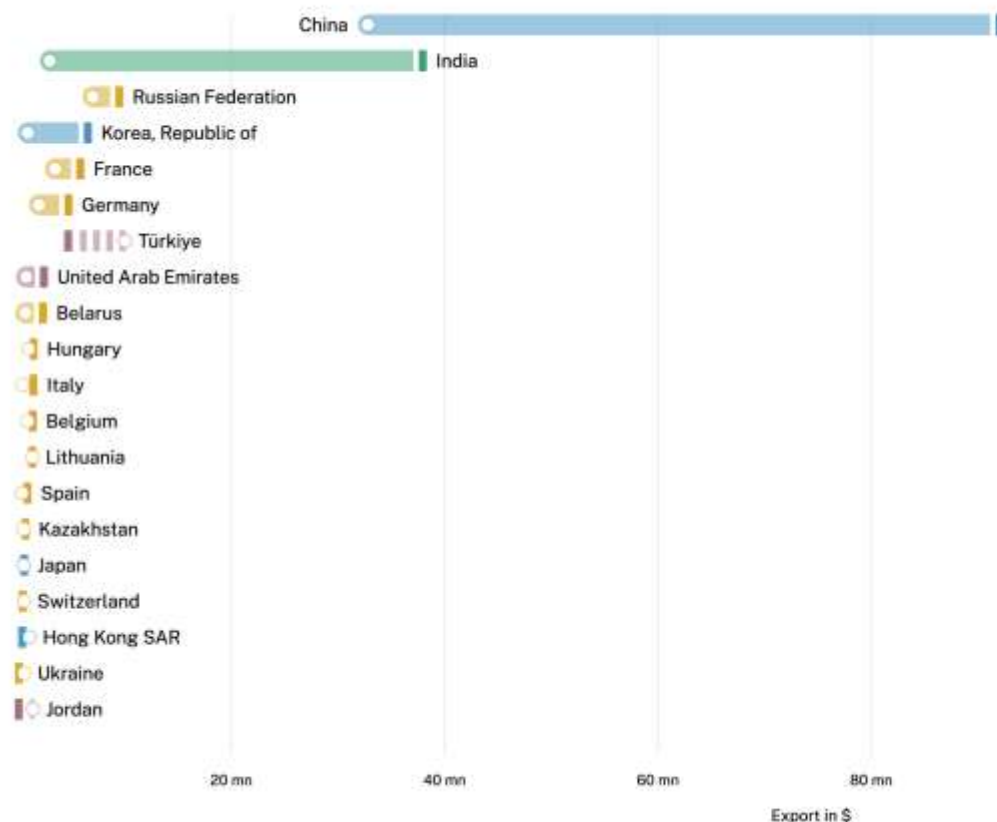
Portable & cooling-towers water treatment · well-drilling water treatment

## Business model

Sale—rent—service & consumables supply to oil & gas companies and other consumers



# Export potential — HS 3808 to Uzbekistan



Countries with potential to export 3808 Insecticides, rodenticides, fungicides, herbicides & similar to Uzbekistan

Legend

■ Export potential  
○ Baseline exports  
■ Potential to baseline exports gap

● East Asia  
● South Asia  
● EU & West Europe  
● East Europe & Central Asia  
● Middle East

ITC Export Potential Map  
[exportpotential.intracen.org](http://exportpotential.intracen.org)

## China

Export potential \$92 mn · baseline exports \$33 mn · unrealized potential remaining \$59 mn

## India

Export potential \$38 mn · baseline exports \$3 mn · unrealized potential remaining \$35 mn

# Where the complex's chlorine goes

| Group        | Cl <sub>2</sub> | NaOCl | HCl |
|--------------|-----------------|-------|-----|
| Insecticides | ✓               | ✗     | ✓   |
| Rodenticides | ✗               | ✗     | ✓   |
| Fungicides   | ✓               | ⚠     | ✓   |
| Herbicides   | ✓✓              | ⚠     | ✓✓  |

✓✓ Significant volume use    ⚠ Limited volume use

## Features

- Chlorine utilization is possible mostly in herbicides production
- Hydrochloric acid use is mostly pH control
- No use of sodium hypochlorite

## Proven internationally



- Most chlor-alkali businesses produce PVC and a wide range of chlorine water-treatment chemicals
- Some companies specialize in chlorine chemicals production and technologies like chlorine dioxide
- Each country is better off securing its own production of this product range

# Three revenue engines around one production core

## PRODUCTION

- Caustic soda
- Sodium chlorite
- TCCA & DCCA
- Hydrochloric acid

*(!) Contract manufacturing possible at a start · possible start with imported chemicals*



### Chemical products consumers

Industrial · food manufacturers · agricultural · livestock producers · public facilities — including own soap-cleaning & detergents production



### On-site generators

Sell, rent, lease & service own generators of chlorine dioxide and sodium hypochlorite · stable chlorine dioxide solution & tablets for hospitals, schools and HoReCa · sodium hypochlorite for the oil & gas industry



### Dicalcium phosphate → livestock

Requires phosphorus & hydrochloric acid — Sichuan University has the technology · consumers: cows, poultry, pork producers · export potential

# Return profile

IRR

**18 % min**

Worst-case sensitivity-test scenario based on feasibility studies of similar projects in Kazakhstan & Uzbekistan

NPV

**Scale-driven**

Depends on the project's scale and on the final products range

PBP

**8–10 years**

Based on feasibility studies of similar projects in Kazakhstan & Uzbekistan · depends on the project's scale

LOAN RATE

**~10 %**

Case including EXIM Bank + Sinosure + development bank + local bank

## Three phases — from \$500 K study to \$70 M complex

### Phase 1

**\$500 K max**

6 months

Pre-feasibility study for the whole complex project ·  
R&D of chlorine dioxide & sodium hypochlorite in  
Kazakhstan · market survey & go-to-market strategy  
preparation

### Phase 2

**\$3 M est.**

up to 12 months

Go-to-market of chlorine dioxide & sodium  
hypochlorite in Almaty & Astana using imported  
generators · basic design / process design package +  
long-lead-items tendering for precise CAPEX  
estimation · site pre-selection

### Phase 3

**\$70 M est.**

up to 24 months

Market expansion to Russia & Uzbekistan · start of  
local manufacturing of on-site generators in  
Kazakhstan · final financial decision · site acquisition ·  
EPC



# One local partner for the entire project

Tau Invest Solutions accompanies the investor through the full investment cycle in Kazakhstan — from site selection and structuring to construction, financing and sales.

## Site & SEZ selection

Land in 7 SEZs and industrial zones matched to a chemical-production profile · 0 % CIT, VAT and import duties confirmed before capital is deployed

## Permits & certification

Environmental, sanitary and industrial-safety permits · EAEU technical regulations and GOST certification of disinfectants and chemicals

## Turnkey construction (EPC)

Design and construction through a partner group with 20+ years of experience — one responsible contractor, fixed timeline and budget

## Financing & banks

Preferential financing packaged through BRK, Damu, QIC and KazakhExport — complementing the EXIM Bank + Sinore structure on the Chinese side

## Sales & distribution

B2B channels, distributors and state tenders across Kazakhstan · brokerage of offtake deals on a commission basis

## Export & government relations

Customs, certificates of origin and logistics to Russia, Uzbekistan and the EAEU · communication with akimats and ministries

## C O N T A C T   U S

# Let's build chlorine chemistry in Kazakhstan together

Thank you! Share your investment criteria — we will respond within one business day with a proposed next step.

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