

# PHOSPHATE FERTILIZER EXPERTISE



**JESA**

**JESA HEAD OFFICE**

Zénith Millenium Immeuble 5  
Sidi Maârouf, Casablanca, Morocco

**JESA TECHNOLOGIES**

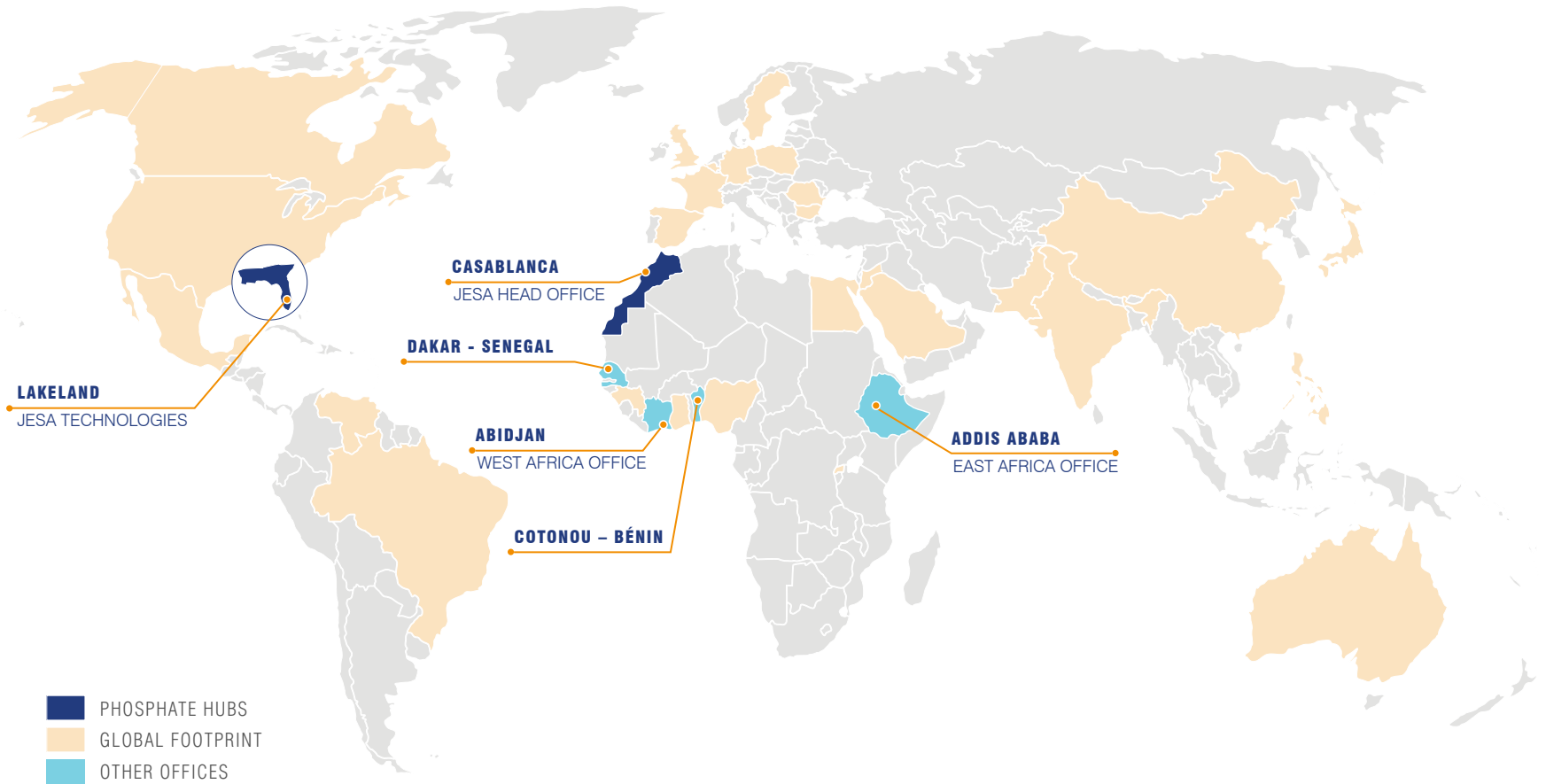
3149 Winter Lake Road  
Lakeland, Florida, 33803, USA

JESA is a world leader in providing phosphate technology solutions. We license Beneficiation, Phosphoric Acid and Granular Fertilizer Technology as well as offer project delivery services to design, engineer and construct these plants.

Our offices in Morocco and Florida, United States, have capitalized a strong experience accompanying the largest phosphate producers, from business cases and process development, bankable feasibility studies, project execution to final start-up and asset management services.

JESA employs multiple subject matter experts with a breadth of experience in operations, design and project delivery. Our connection with Worley network allows us to benefit our clients worldwide from our global expertise with local delivery.

# OUR COMPANY AT A GLANCE



# FROM PIT-TO-FERTILIZERS

OVER  
**130**  
Plants using our Technology

**\$168**  
Million Revenue FY2018

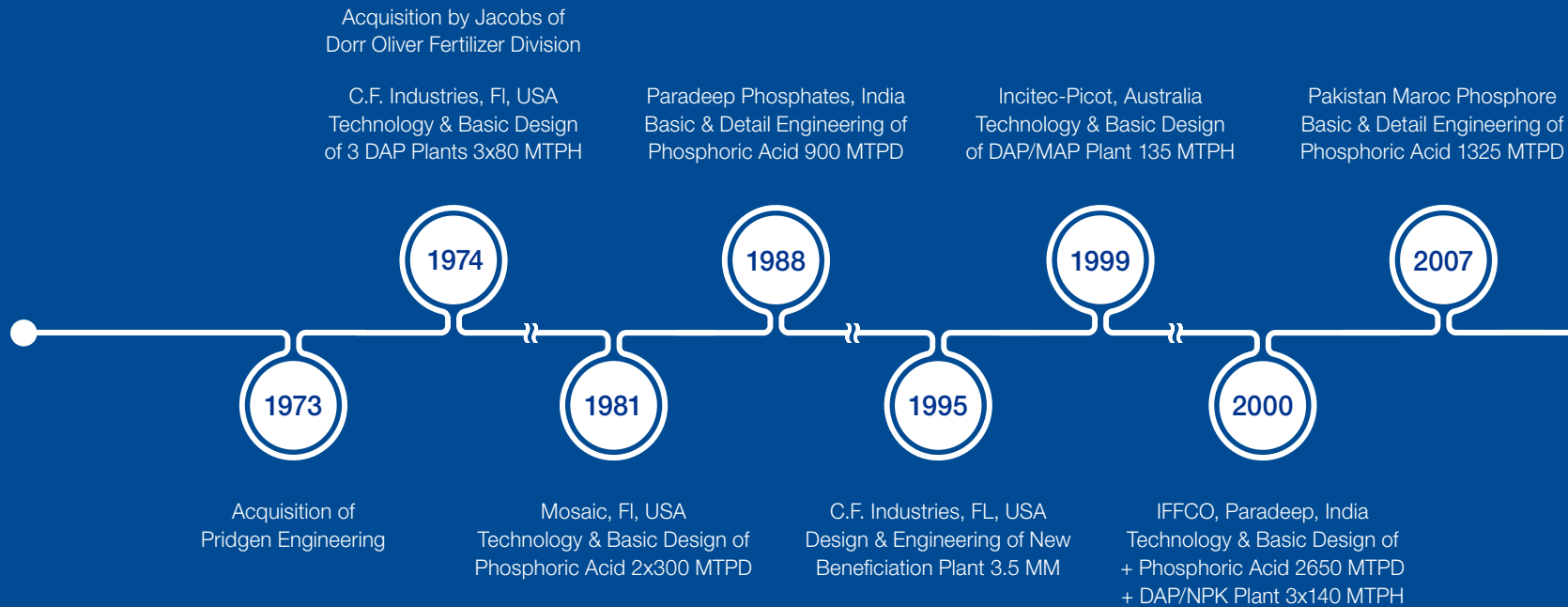
**92%**  
Client Satisfaction Survey

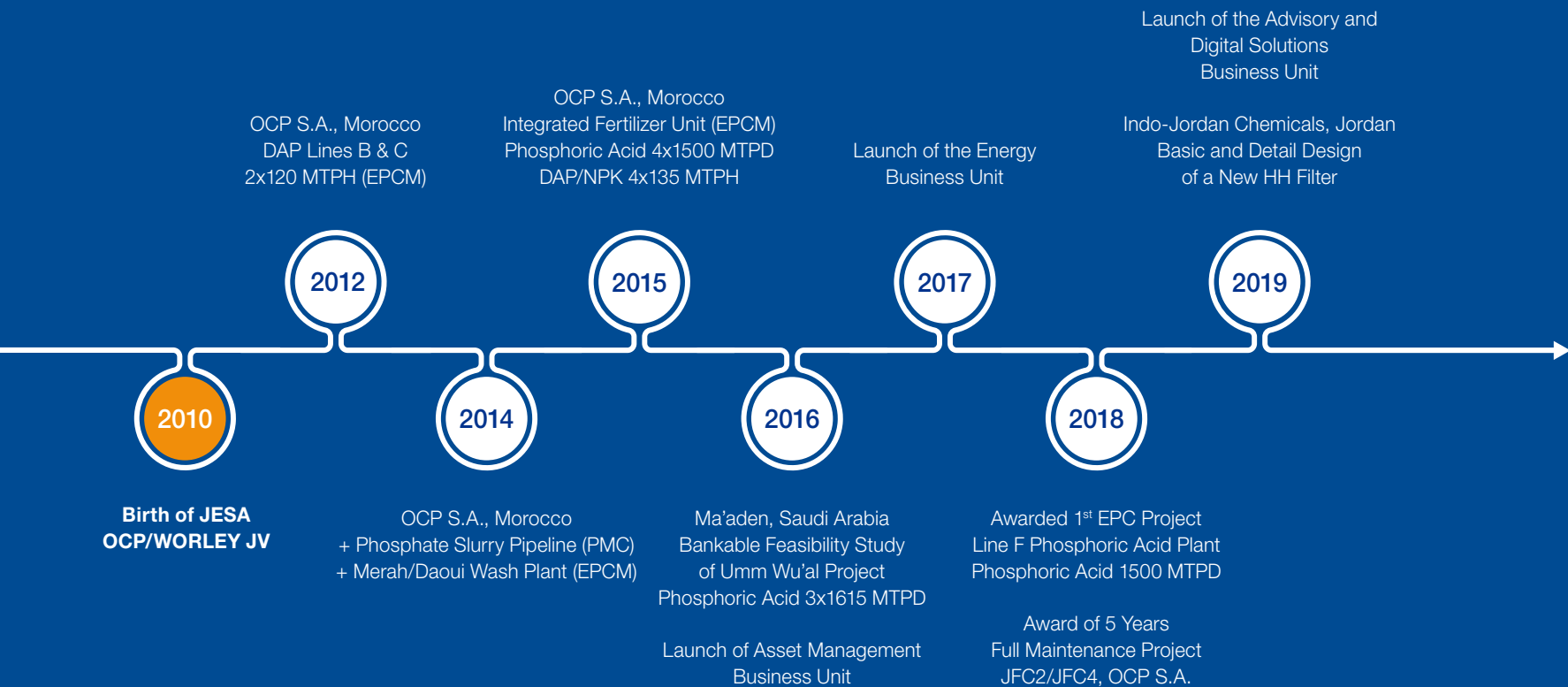
**1700**  
Employees FY2020

**7** Casablanca, Morocco  
Rabat, Morocco  
Lakeland, FL United States  
Abidjan, Côte D'Ivoire  
Adis Abeba, Ethiopia  
Cotonou, Benin  
Countries

OVER  
**2.2**  
Million Workhours / Year

# OUR PHOSPHATE JOURNEY







## WE DELIVER EXCELLENCE THROUGHOUT THE PROJECT LIFE CYCLE

JESA is a unique technology and services provider offering end-to-end capabilities from phosphate rock to fertilizers. Our Technology office in Lakeland, Florida is an acknowledged leader in the design of the beneficiation, phosphoric acid and fertilizer plants.

Our offices in Morocco have capitalized on a strong experience accompanying the largest phosphate producers, from business cases

and process development, bankable feasibility studies, project execution to final start-up and asset management services.

JESA has been continuously involved in designing and delivering safe, robust and reliable plants in the fertilizer market. Maintaining long-term relationships is core to our business values to enable the timely delivery of your project with the expected economics.







“Today, JESA is the world leader in phosphates engineering. We are committed to excellence and offer integrated capabilities across the fertilizer value chain, from “Pit to Fertilizer” with innovative solutions through asset lifecycle: consulting, technology, project management, operation and maintenance, digital solutions...,,

Managing Director



## OUR SAFETY CULTURE

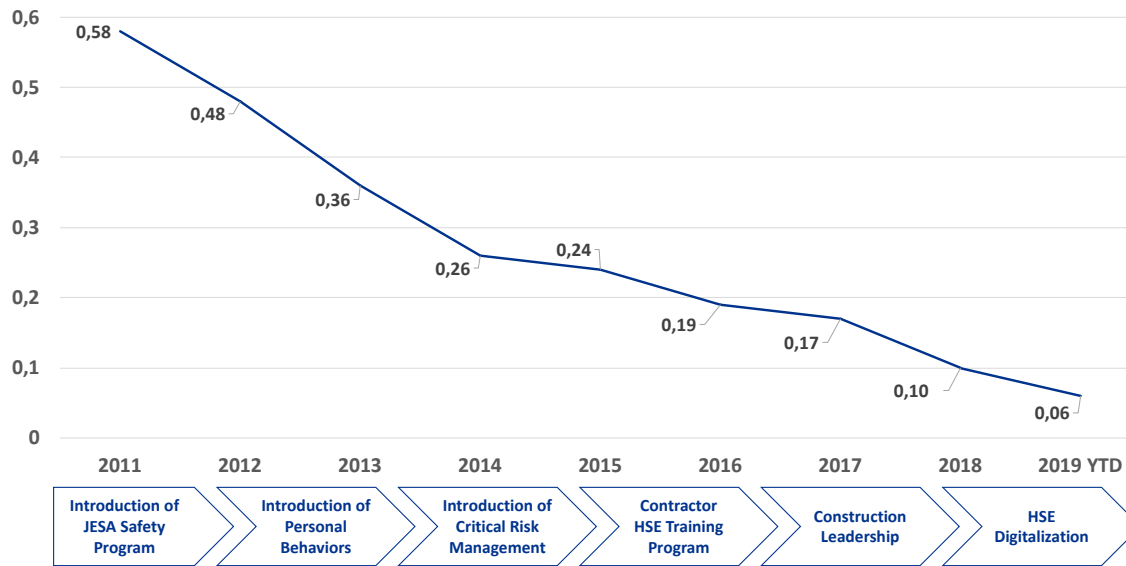
We have adopted our safety culture from our mother companies and implement an unyielding stand on HSE with our world class integrity management framework. This enterprise-wide program aims to prevent even one accident from occurring and provides assurance that delivery of services is consistently:

- Preventing harm to people and assets, and environmental incidents
- Operating in accordance with ethical, regulatory and legal requirements and relevant codes of practice
- Meeting our customers' and our own expectations for Zero Harm
- Supported by efficient and effective operations.

For us, safety is how we live first and we do business second.



### TRIR EVOLUTION



It is throughout our collaborative efforts that we proudly and effectively introduced world-class standard and safety culture in the region. Our safety performance in 2019 recorded TRIR of 0.09.

**JESA**

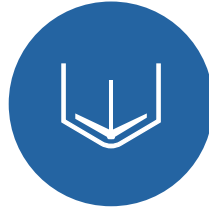
# TECHNOLOGY PORTFOLIO

## LABORATORY AND PILOT PLANT CAPABILITIES



### LABORATORY ANALYSIS & BENCH SCALE TESTS

- + Mineralogical Ore Characterization
- + Analysis & Quantification of Trace Elements
- + Atomic Absorption



### BENEFICIATION PILOT TESTS

- + Washing
- + Grinding
- + Classification
- + Magnetic Separation
- + Flotation
- + Thickening



### PHOSPHORIC ACID PILOT TESTS

- + Rock Grinding
- + Reaction-Continuous
- + Filtration-Batch
- + Concentration-Batch
- + Corrosion Measure
- + Slurry Characteristics
- + Reaction Volume
- + Filter Sizing
- + Acid Quality
- + P<sub>2</sub>O<sub>5</sub> Recovery



### FERTILIZER PILOT TESTS

- + MAP / DAP
- + NP / NPK
- + TSP / SSP
- + Product Analysis
- + Product Hardness

Our Lakeland, Florida, facilities include an analytical laboratory, a bench-scale metallurgical ore testing laboratory, a fully equipped beneficiation pilot plant capable of either batch or continuous operation which allows us to design the optimum flowsheet. In addition, we also have a pilot-scale phosphoric acid pilot plant, with facilities to produce concentrated phosphoric acid (MGA and SPA), and facilities to produce and test phosphate fertilizers such as MAP, DAP, SSP, TSP and NPK fertilizers.





MERAH BENEFICIATION PLANT, KHOURIBGA - OCP SA





## PHOSPHATE BENEFICIATION

JESA Technologies is a leader in the design of phosphate beneficiation. We have designed plants in many countries around the world including:

- Peru
- China
- Mexico
- Tunisia
- Canada
- Morocco
- Saudi Arabia
- United States.

The different type of phosphate ores and the variety of today's beneficiation flowsheets attest to the fact that there is no universal phosphate beneficiation process. Our experience encompasses all aspects of phosphate rock beneficiation including:

- Crushing, Screening and Desliming
- Grinding and Classification
- Attrition Scrubbing
- Magnetic Separation
- Gravity Separation
- Conditioning and Flotation
- Dewatering and Thickening
- Wastewater Recovery.

The configuration of a phosphate mine and beneficiation plant with the related material handling facilities is important economically to reduce the cost per ton.

## PHOSPHATE BENEFICIATION

We have designed beneficiation plants from simple flowsheets for the removal of gangue minerals by wet or dry size separations, to more complex flowsheets utilizing comminution, classification, froth flotation, heavy media separation, and sorting... In addition to the design and operation of beneficiation plants, our experience covers:

- Site selection (plant, waste disposal)
- Material handling and transportation
- Dewatering, disposal, and reclamation of wastes
- Dewatering, preparation, and load-out of product
- Plant water, reclaim water and make-up water systems
- Dust suppression and collection
- Offsites, ancillaries and services.

In today's global economy, phosphate rock must be produced to meet quality specifications at a competitive price. To assure high performance and low cost, we design modern phosphate beneficiation plants with the following attributes:

- High capacity to obtain economy of scale for construction
- Process technology tailored to efficiently exploit the ore deposit
- Reliable equipment for processing and materials handling
- Effective arrangement of equipment for operation and maintenance.

At JESA, we specialize in integrating geology, mining, and beneficiation with the downstream facilities that process phosphate rock. That way, the overall economic return is optimized.





BENI AMIR BENEFICIATION PLANT, KHOURIBGA - OCP SA

## PHOSPHORIC ACID

JESA Technologies is an acknowledged leader in the design of phosphoric acid plants and has achieved an unbroken involvement within the industry since the 1930's.

Our process is based on decades of experience gained in more than 30 similar annular reactors in operation throughout the world.

Recent projects have included 4 world-scale (1500 MTPD each) plants for OCP at Jorf Lasfar, Morocco and 3 world-scale plants (1615 MTPD) for Ma'aden at Wa'ad Al Shamal, Saudi Arabia.

The largest phosphoric acid plant in the world operated by IFFCO in Paradeep, India was designed and started-up in 2000 for a design capacity of 2600 MTPD.

JESA Technologies offers three process routes to produce phosphoric acid; Di-Hydrate (DH), Hemi-Hydrate (HH) and Hemi-Di-Hydrate (HDH). The DH and HH process variance are single crystallization processes whereas the HDH process is a double crystallization process designed to significantly increase  $P_2O_5$  recovery.



33

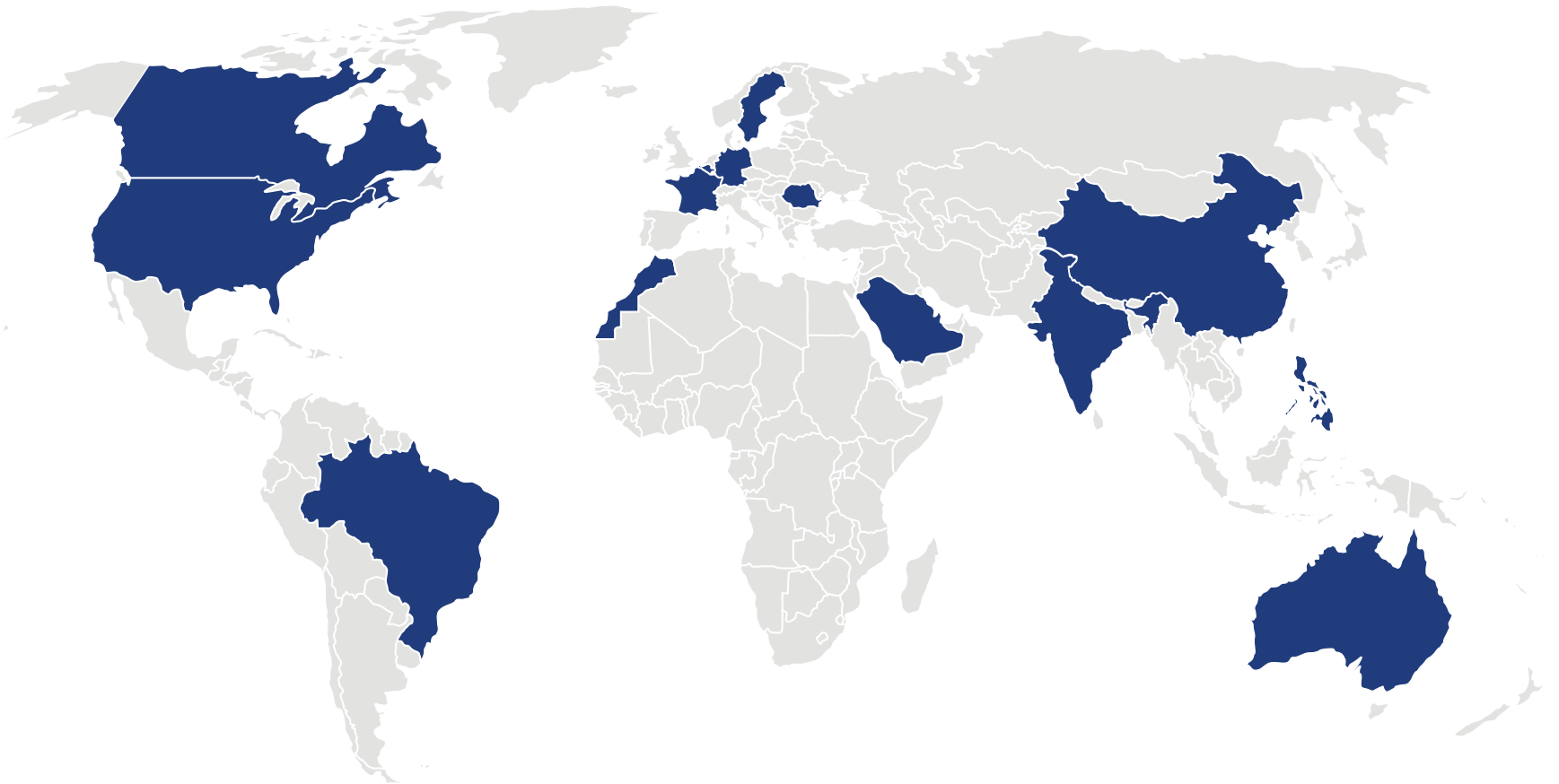
Operating Units

15

Countries

14

Ore Sources



Our Phosphoric Acid Plants and Evaporation Systems have been supplied all around the world.

# PHOSPHORIC ACID PROCESSES

## DI-HYDRATE (DH)

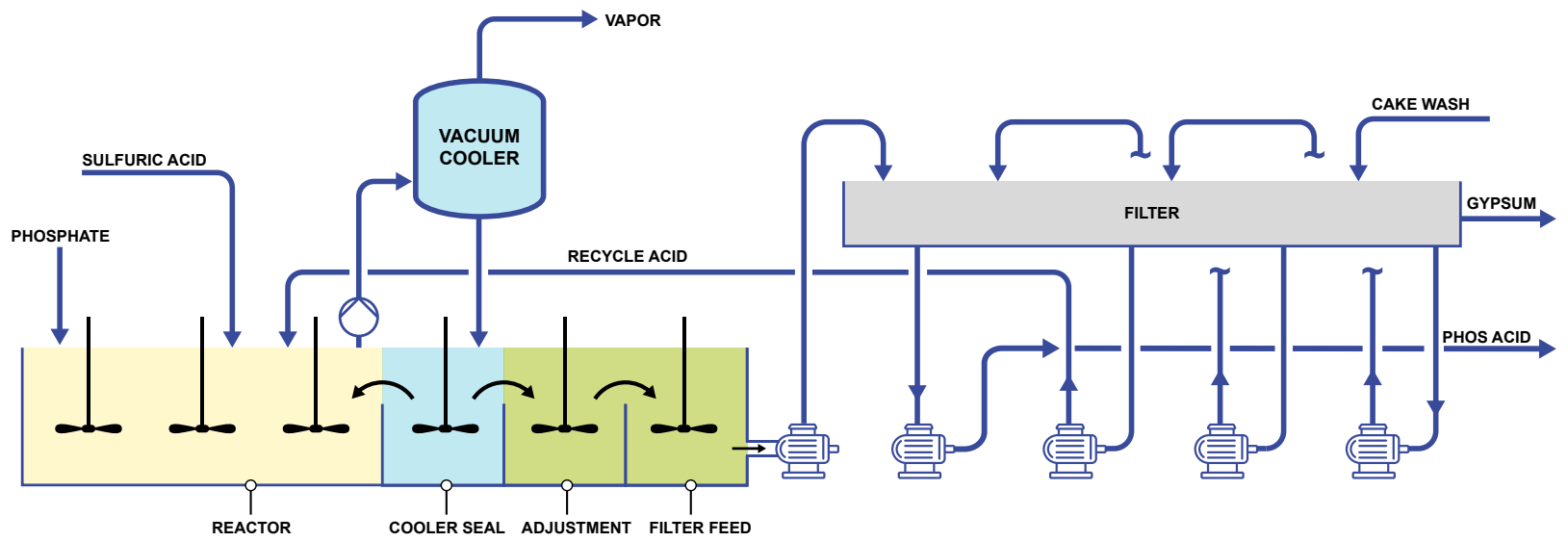
The Di-Hydrate (DH) process is the most common process. The largest production capacity plants are using the DH process. DH Plants are also more stable to operate.

The DH process is preferred generally when the investment is coupled to fertilizer production. Further, DH Plants have taken advantage of the economies of scale lowering the unit costs. Global recovery at the feed stock is higher for this technology.

Equipment Design	Single Reactor Single Crystal Filtration
Rock Sources	Flexibility
Rock Feed	Dry or Wet
Concentration	26-29%
Filter Recovery	94-96%

### FEATURES AND BENEFITS

- The DH Process offers higher on-stream times which results in higher annual production capacity and reduced maintenance (reduced OPEX).
- DH Plants operate at a lower temperature which reduces the problems with rubber lining and corrosion allowing a lower grade of stainless steel (reduced CAPEX).
- The DH Process is more forgiving to variations in rock quality, which offers flexibility to accept different rock qualities. Especially for producers who import rock phosphate.
- The DH Process generally requires smaller filters due to the higher filtrations rates (reduced CAPEX).
- The DH Process does not require dry rock nor anti-scaling agents (reduced CAPEX and OPEX).





LIGNE E

ATELIER PHOSPHORIQUE

LINE E PHOSPHORIC ACID PLANT, JORF LASFAR - OCP SA



# PHOSPHORIC ACID PROCESSES

## DI-HYDRATE (DH)

### Reaction / Filtration Section

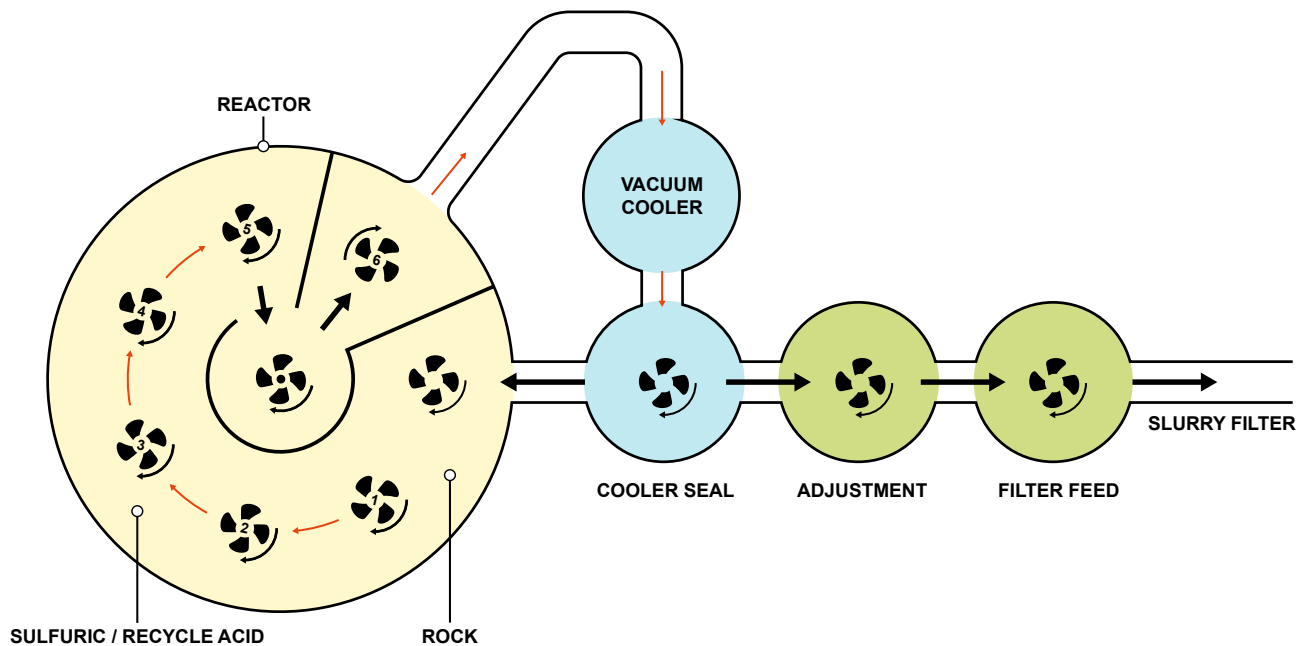
Phosphate rock slurry is pumped to the front-end of the reactor where it is reacted with sulfuric acid mixed with recycle acid from filter.

The reaction system is maintained at 80°C by recycling reactor slurry via the flash cooler. The cooler seal tank overflows to the maturation tank where crystals continue to grow.

The vacuum pump draws the gasses through the flash cooler to a condenser where the vapors are condensed to control the vacuum in the flash cooler.

Two filters operating in parallel, are preferred in order to maintain high operating factors for the reactor, meaning when one filter is on wash the other can continue production and keep the reactor online, which will result on increasing the global recovery.

The dihydrate cake can be discharged from the filters dry and conveyed to the gypsum storage area. However higher global  $P_2O_5$  recovery can be obtained using a wet discharge system.



# PHOSPHORIC ACID PROCESSES

## HEMI-HYDRATE (HH)

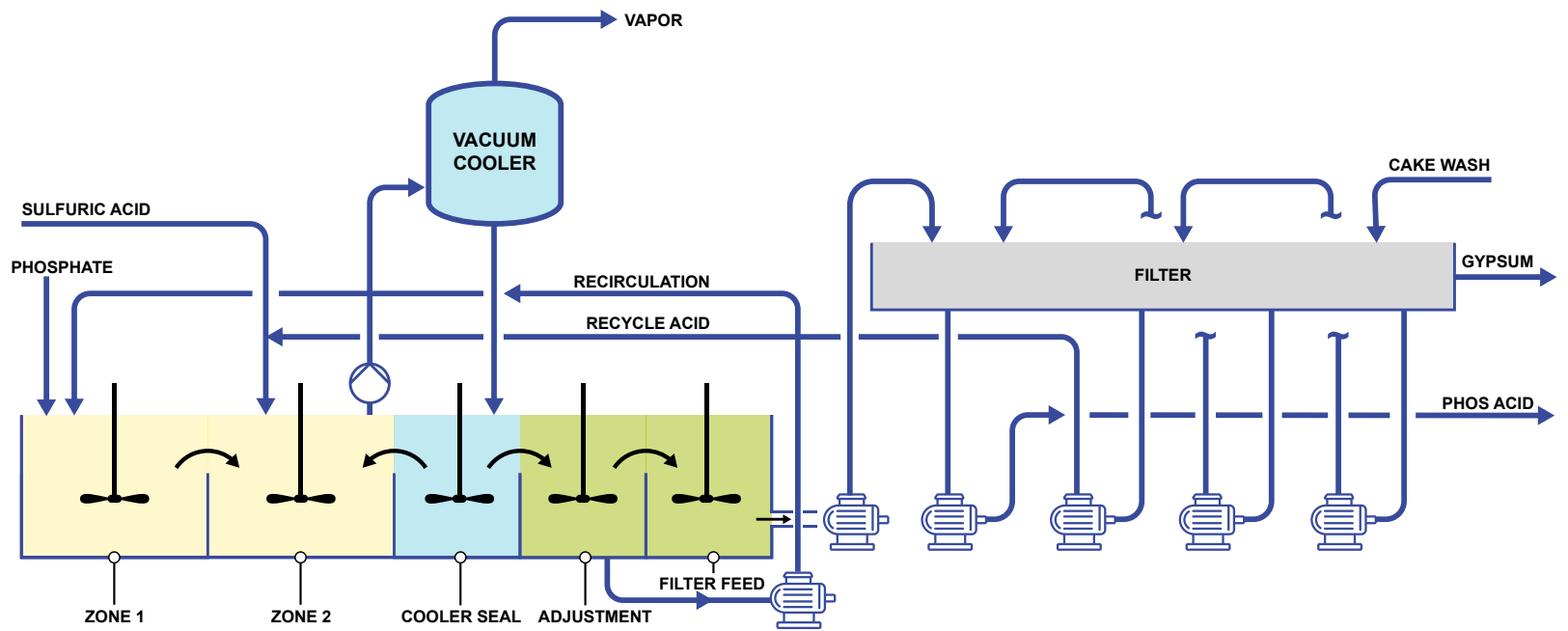
The Hemi-Hydrate (HH) process is sometimes selected when the plant is located close to a mine owned by the operator and steam is costly (for example no adjacent sulfuric acid plant). It allows production of 38-48%  $P_2O_5$  acid directly, with consequent valuable savings in energy.

Hemi-Hydrate (HH) is the second most used wet process after the Di-Hydrate (DH).

Equipment Design	Single Reactor Single Crystal Filtration
Rock Sources	Limited
Rock Feed	Dry Only
Concentration	26-29%
Filter Recovery	92-94%

### FEATURES AND BENEFITS

- The HH Process can accept coarse rock grind which reduces the overall power consumption associated with grinding (reduced CAPEX and OPEX).
- The HH Process produces 38-48%  $P_2O_5$  acid directly from the filter which reduces the steam/water consumption associated with the evaporators (reduced OPEX).
- The HH Process requires less cooling which impacts the design of the flash cooler (reduced CAPEX) and reduced scaling in the flash cooler down leg.
- No 40% acid clarification required (reduced OPEX). Acid from the HH process tends to contain substantially less free sulphate and suspended solids and lower levels of aluminum and fluorine.



# PHOSPHORIC ACID PROCESSES

## HEMI-HYDRATE (HH)

### Reaction / Filtration Section

The annular reactor is configured to create two reaction zones by means of an internal wall with an overflow.

The main differences between DH and HH configurations are:

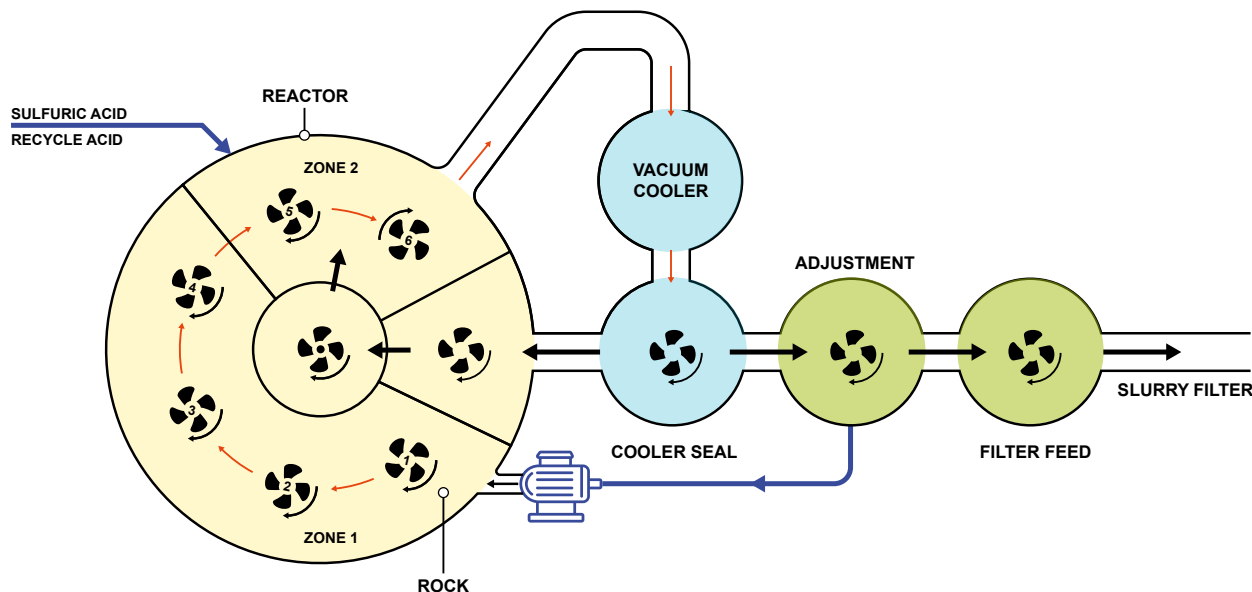
Rock is fed dry into Zone 1. Reaction slurry from Zone 2 is recycled to Zone 1 via a recirculation pump.

Zone 1 overflows to Zone 2 where a controlled feed of sulfuric acid is fed to maintain the required sulfate level.

The reaction system is maintained at 100°C by recycling reactor slurry via the flash cooler.

The hemihydrate cake generally discharges from the filters dry and is conveyed to the gypsum storage area. If a wet discharge system is to be considered an anti-scale agent will be necessary to prevent the conversion to di-hydrate.

It is necessary to add an anti-scale agent at various points in the filtration section.





# PHOSPHORIC ACID PROCESSES

## HEMI-DI-HYDRATE (HDH)

The Hemi-Di-Hydrate (HDH) process is a double crystallization process which allows the recovery of  $P_2O_5$  losses that are trapped in the crystal lattice.

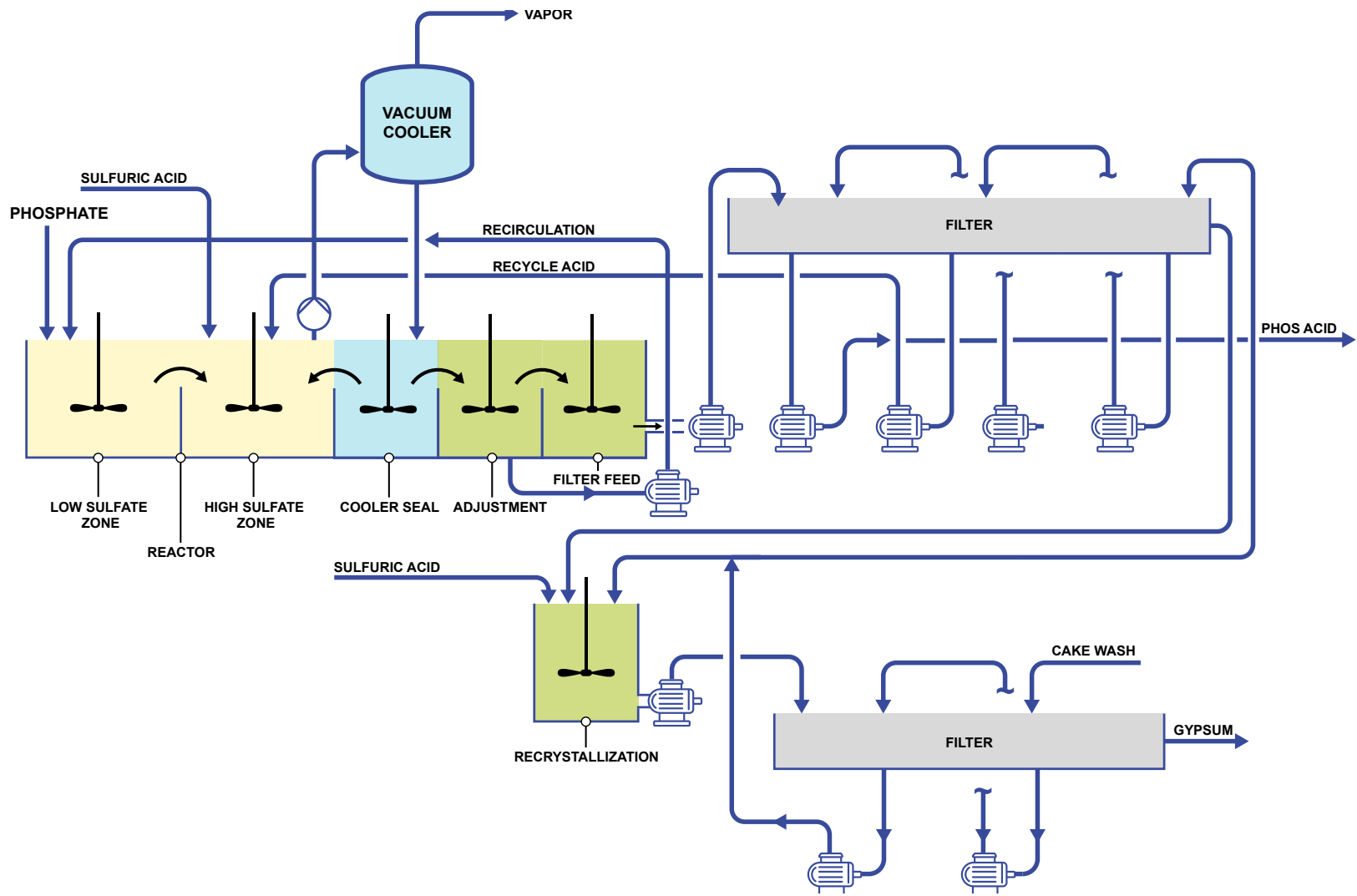
This not only raises the overall efficiency of the process but also gives a much cleaner calcium sulphate.

The HDH process is used for medium size plants when no steam and sulfuric acid available.

Equipment Design	Single Reactor Double Crystal Filtration
Rock Sources	Limited
Rock Feed	Dry Only
Concentration	38-48%
Filter Recovery	97.5-98.5%

### FEATURES AND BENEFITS

- The HDH Process can accept coarse rock grind which reduces the overall power consumption associated with grinding (reduced CAPEX and OPEX).
- The HDH Process produces 38-48%  $P_2O_5$  acid directly from the filter which reduces the steam/water consumption associated with the evaporators (reduced OPEX).
- The HDH Process requires less cooling which impacts the design of the flash cooler (reduced CAPEX) and reduced scaling in the flash cooler down leg.
- No 40% acid clarification required (reduced OPEX). Acid from the HDH process tends to contain substantially less free sulphate and suspended solids and lower levels of fluorine.
- The HDH Process has a typical  $P_2O_5$  recovery of 98.5% compared to 95% for DH and 92% for HH.
- The HDH Process produces a significantly cleaner gypsum than the DH or HH processes.

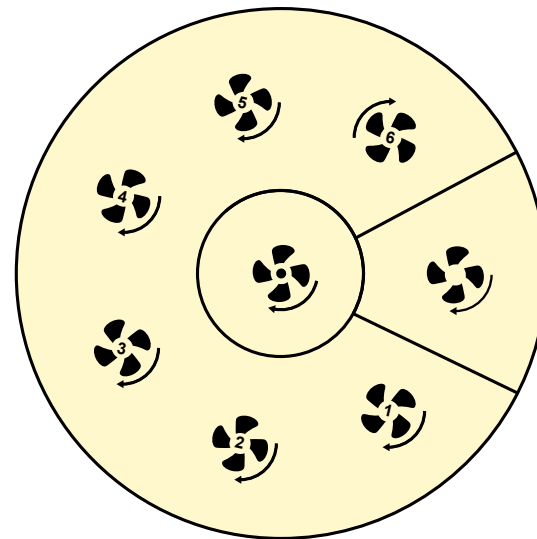
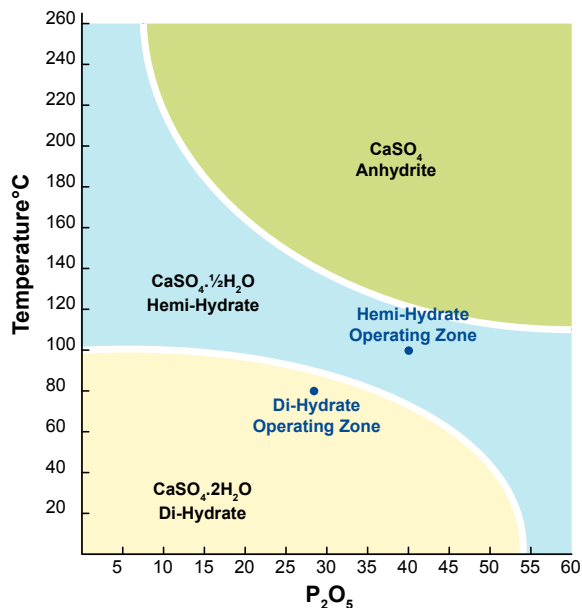


# PHOSPHORIC ACID PROCESSES

## EQUIPMENT FEATURES

The major feature of the JESA Technologies process is the annular reactor. The reactor has many advantages versus other reactor configurations.

- Each reactor is custom built based on the ore source and process goals. Sturdy reinforced concrete construction with an inner support wall for proven long life.
- Circular with few dividing walls. The configuration minimizes downtime during normal maintenance clean outs and provides the highest on-stream factors in the industry.

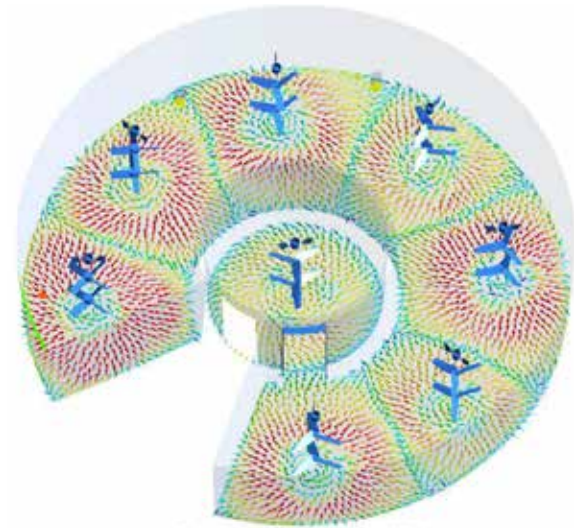


- Agitators, rock feed, sulfuric, recycle feed and flash cooler feed generate the flow while the agitators keep all solids entrained and off the floor. This keeps the total reaction volume available year-round.
- If an agitator fails and it must be removed for maintenance, the others keep the process going and a shutdown is not necessary.
- Agitation is optimized utilizing state of the art techniques which minimizes CAPEX/OPEX and maximizes dissolution, gas dispersion and internal recirculation.



- The reactor provides a controlled combination of slurry recirculation by means of cooler circulating pumps and back-mixing from the geometric configuration of the annular reactor. The combination provides the least capital and operating costs for obtaining a high yield and extremely filterable gypsum.
- Stable reaction system with very easy sulfate control. Variations in rock feed streams are easily handled.
- Proprietary mixing tee for sulfuric acid addition eliminating hyper-saturation zones producing a highly filterable gypsum.
- Rock dissolving area completely separated from the maturation area where the crystals are grown.
- Defoamer consumption per ton  $P_2O_5$  has been shown to be low at high throughputs.

- Low-level, low-energy flash coolers for process temperature control and slurry recirculation. Designs minimize entrainment and potential carryover and provide a means to recover any  $P_2O_5$  lost through the vapor duct.



## PHOSPHORIC ACID PROCESSES

### ADD-ON SOLUTIONS

#### Fluo-Silicic Acid (FSA)

FSA systems are custom designed for each client. They can be designed for environmental purposes, which has a lower CAPEX than the commercially produced FSA. For Commercially produced FSA we provide high efficient entrainment separators to produce 24% FSA with less than 100 ppm  $P_2O_5$ .

JESA Technologies is currently performing R&D on FSA to produce an economically viable means to neutralize fluorine with relatively low CAPEX. Portions of this process are currently commercially available, but the last unit operation is subject to the patent submission.

#### Iron Removal

Other R&D efforts have produced a patent for iron removal from phosphoric acid. Iron removal is for ores with high iron content. A slip stream can be treated reducing the size of equipment necessary to bring the content low enough to improve yields and grades in granulation.



INTEGRATED FERTILIZER PLANT (ODI), JORF LASFAR - OCP SA

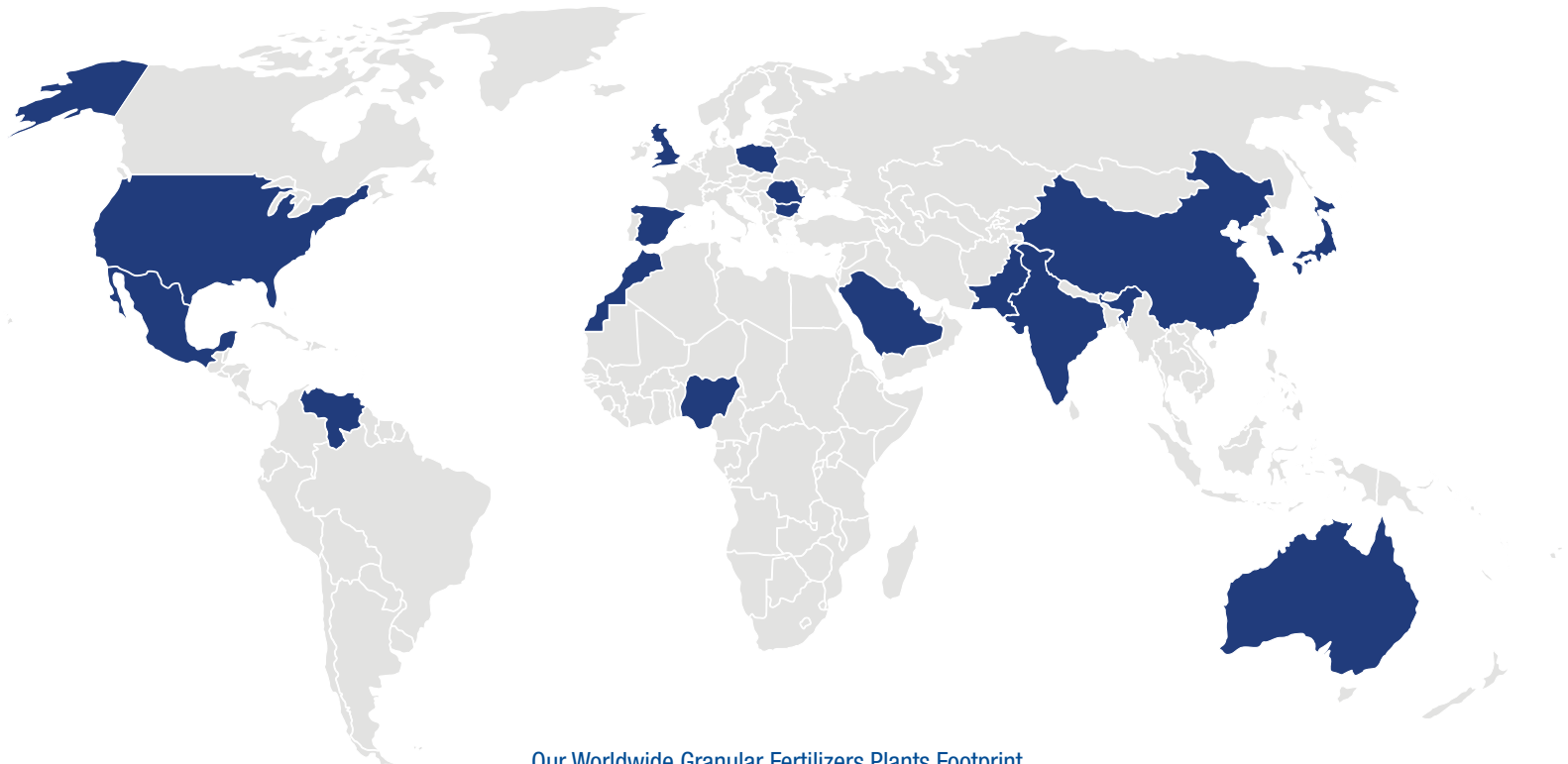
## GRANULAR FERTILIZER

JESA Technologies has designed granulation plants that produce over 20 million tones per year of granular fertilizer in various forms including DAP, MAP, TSP and NPK grades.

Since 2003 in Morocco alone, 11 lines capable of producing over 9 million tones per year of granular fertilizer have been installed.

Our granulation process is very flexible and with minor modifications can be adapted to produce a combination of both TSP, NPK and APS. Product trace elements can be added to provide supplementary nutrients.

JESA TECHNOLOGIES IS THE ONLY SUPPLIER  
WITH MULTIPLE 120 TONS/HR PLANTS



Our Worldwide Granular Fertilizers Plants Footprint



DAP PLANT, JORF LASFAR - OCP SA

# GRANULAR FERTILIZER

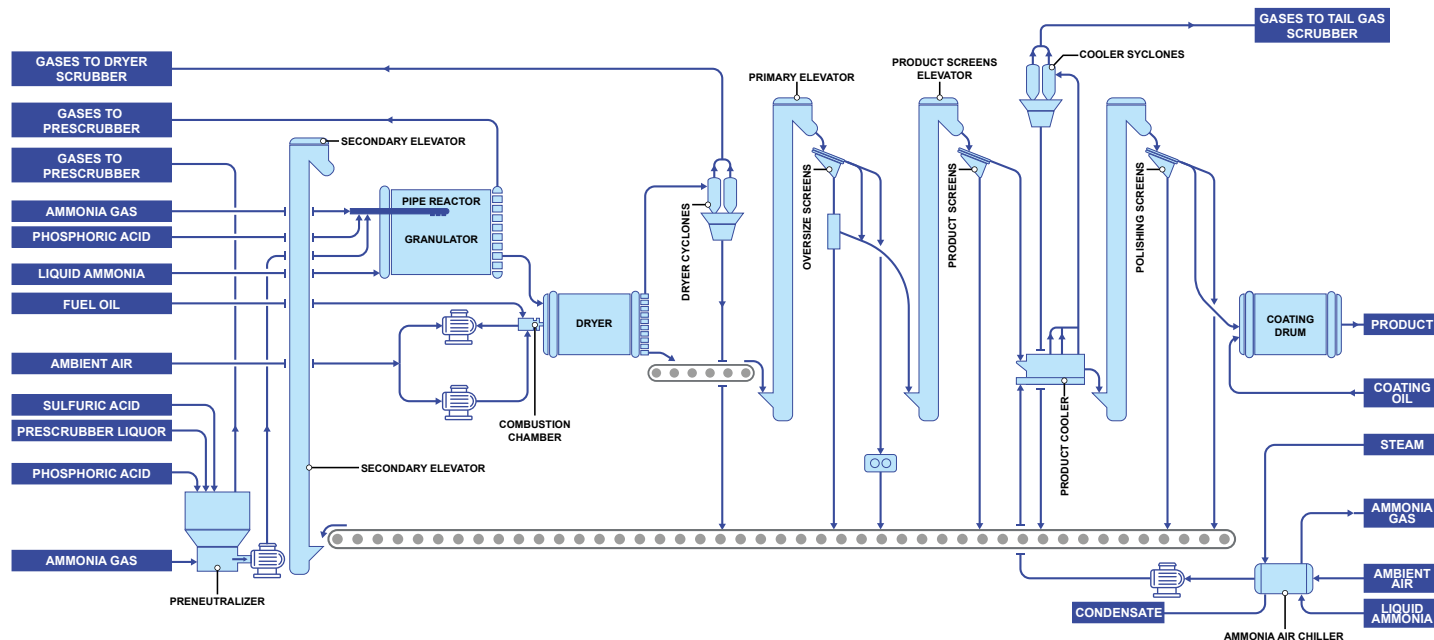
## Flowsheet Options

For the production of NPK grades, the flowsheet is adjusted with the addition of feed systems incorporating weigh belt feeders for the solid potash and/or other nitrogen feed (e.g. ammonium sulfate, urea etc.).

In cases where significant quantities of urea is incorporated, the screening system is adjusted so that the oversize is cooled. This allows the granulation temperature to be controlled at a level which prevents excessively soluble conditions and also avoids problems of build-up inside the crushers.

In addition, NPK products require a longer residence time for drying, particularly when urea is incorporated in the formulations. This is because lower product water contents are required (0.8% maximum, depending on grade) and lower drying temperatures have to be used due to the low melting point of these mixtures.

NPK products also need to be coated with an anti-caking treatment for satisfactory storage properties. Particularly for fertilizers containing urea, the best coating is a finely ground clay. An oil is also added to act as a “glue” to stick the dust to the surface of the granule. The coating can be carried out in a ribbon blender or a small rotary drum.





DAP PLANT, JORF LASFAR - OCP SA

## FEATURES AND BENEFITS

### Process Features

- Pre-neutralizer
- Pre-neutralizer / Pipe Reactor Combination
- Efficient drilled pipe granulator  $\text{NH}_3$  sparger
- Product screen control system
- Accurate control of recycle
- Dual Mole Ratio scrubbing system
- Energy efficient  $\text{NH}_3$  vaporization.

### Benefits

- Stable operation at the minimum recycle ratio
- Small equipment sizes even for large capacity plants producing multiple grades (reduced CAPEX and OPEX)
- Very high product uniformity index (UI) with minimum screening area requirements
- Maximum ammonia recovery, minimum fluorine emissions
- High on-stream factor
- Energy savings (reduced OPEX).

# GRANULAR FERTILIZER

## EQUIPMENT FEATURES

### Pre-Neutralizer

The JESA Technologies process for DAP/MAP/APS/NPK production uses a stirred tank reactor (pre-neutralizer) to react ammonia with phosphoric acid.

In order to minimize the water required for fluidity of the slurry, the reactor is normally operated at the point of maximum solubility, which occurs at N:P mole ratios of approximately 0.7 and 1.45.

Further ammoniation is carried out in the granulator to raise the mole ratio to 1.1-1.25 or 1.6-1.85 in order to obtain the correct product grade. This mode of operation produces high quality product - uniform large size, spherical and hard.

### Pipe Reactor

A pipe reactor can be offered as an option operating in series with the pre-neutralizer. Further strong phosphoric acid and gaseous ammonia are added to the pipe reactor thus reducing the water content of the pre-neutralizer slurry before it discharges into the granulator. Operation in this fashion allows lower recycle ratios and hence higher production rates at the expense of product quality (size, uniformity and shape).

### Dual-Mole Scrubbing System

Dual-mole scrubbing allows maximum removal of ammonia and fluorine from the plant off-gases. The gases most heavily laden with ammonia are first scrubbed in a pre-scrubber at MR 1.5 which minimizes fluorine stripping. The gases are then scrubbed in the RGV and dryer scrubbers at MR 0.7 to efficiently capture the remaining ammonia but with a low incoming fluoride load.

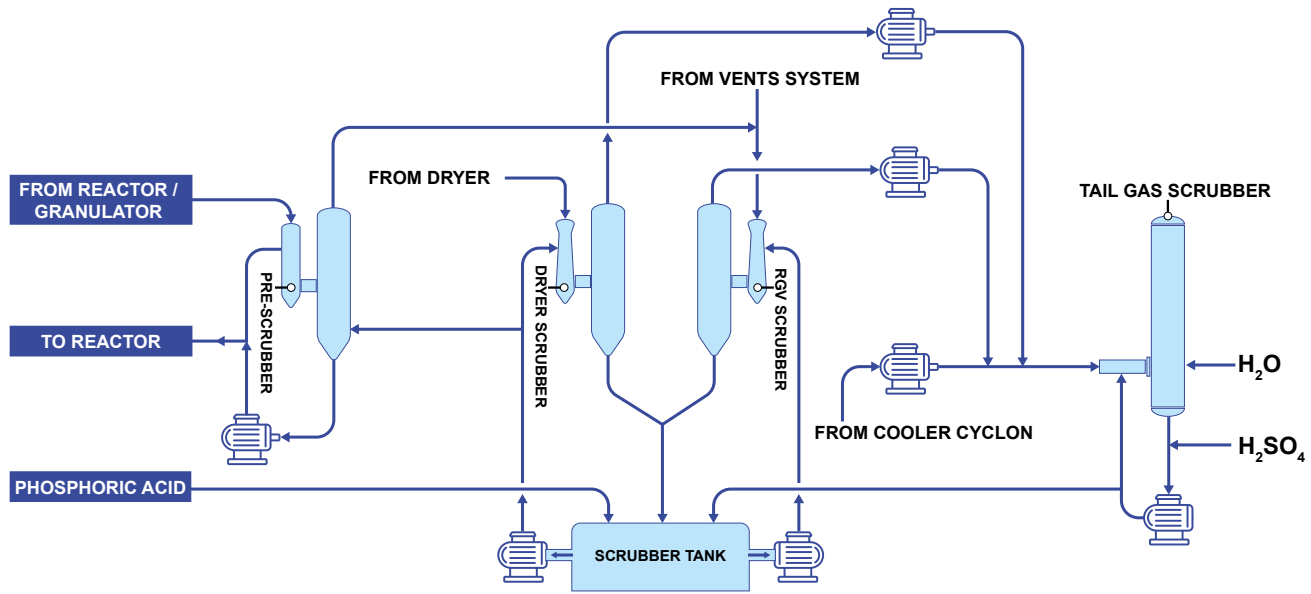
### Recycle Control

To precisely control the quality of granulation it is necessary to accurately control the recycle rate by diverting some product size material to the recycle stream. Double deck fines screens allow "large size" product (>3 mm) to be separated and pass directly to the cooler whereas a portion of the "small size" product is diverted to the recycle stream. In this way, only relatively small product is recycled, which increases the surface area of the recycle per tonne thus minimizing recycle ratio and results in a more closely sized product.

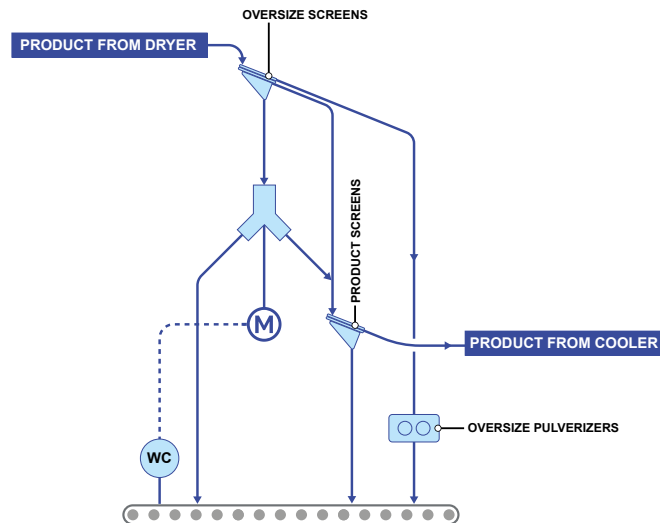
The recycle is weighed on a conveyor belt and the rate automatically controlled by adjusting the amount of product diverted to the recycle stream. The conveyor has a specially designed enclosure which is connected to the plant dedusting system to keep the atmosphere in the plant dust free.



## Dual-Mole Scrubbing System



## Recycle Control



**JESA**

# PROJECT DELIVERY

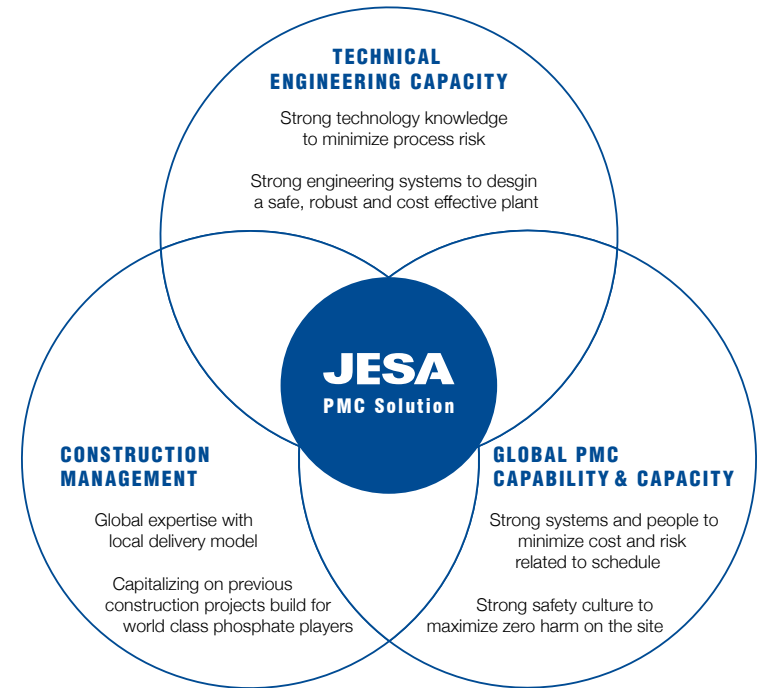
# PROJECT DELIVERY

## PMC SOLUTION

For decades, we helped our client to design, engineer and build reliable plants at the most competitive cost. Our continuous involvement in executing phosphate fertilizer projects demonstrates our comprehensive ability to provide optimized services tailored to our clients' objectives and needs.

Our PMC solution is based on three (3) pillars that take into consideration the technology aspects, the engineering requirement, the location particulars and the construction challenges, to deliver the projects with respect of schedule, cost, quality and more important safety.

We are experienced in assessing and integrating various process technologies (Ammonia, Urea, Sulfuric Acid, ...) to deliver fertilizer plants beyond phosphates, ensuring the best solution for our clients.



BILLION  
**\$2.8**  
of Managed TIC

MILLION  
**\$325**  
Clients Approved Saving Cost

THOUSAND  
**122**  
tCO<sub>2</sub>e Carbon Saving



BENI AMIR BENEFICIATION PLANT, KHOURIBGA - OCP SA



MERAH BENEFICIATION PLANT, KHOURIBGA - OCP SA



PORT INFRASTRUCTURE, JORF LASFAR - OCP SA



SLURRY PIPELINE TERMINAL STATION, JORF LASFAR - OCP SA

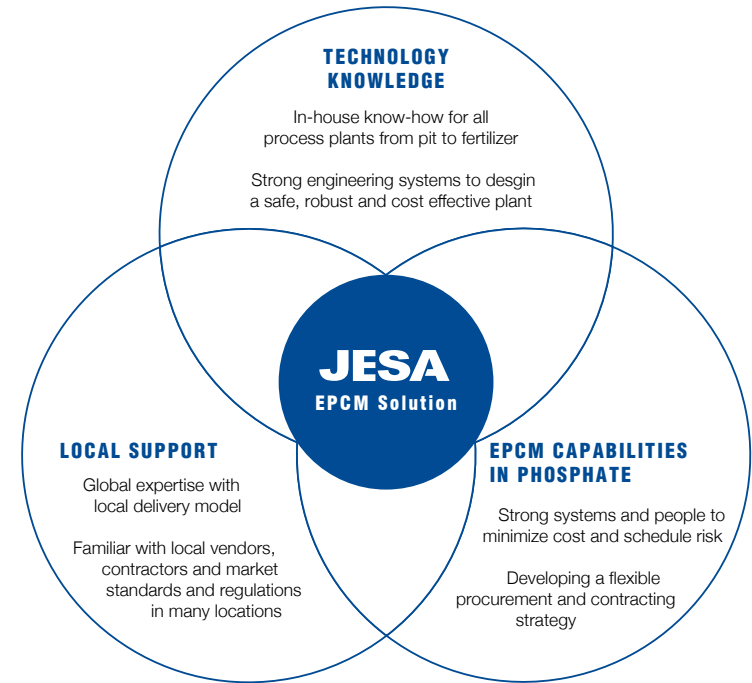
# PROJECT DELIVERY

## EPCM SOLUTION

We, at JESA, are proud to be a unique end-to-end services provider in the phosphate market. We have more than 1000 dedicated project management, engineering, procurement, supply chain and construction management professionals who have been involved in phosphate projects and operations.

In addition, our connection to Worley's global network allows us to expand our expertise and benefit our clients around the world from our global experience with local delivery.

We are experienced in assessing and integrating various process technologies (Ammonia, Urea, Sulfuric Acid, ...) to deliver fertilizer plants beyond phosphates, ensuring the best solution for our clients.



MILLION  
4.1

Detail Engineering  
Man-Hours

BILLION  
\$1.8

Procured Equipment

OFFICES  
20

Directly Involved  
(Global Workshare)



LINE E PHOSPHORIC ACID PLANT, JORF LASFAR - OCP SA



DOWNSTREAM, JORF LASFAR - OCP SA



DAP STORAGE UNITS, JORF LASFAR - OCP SA



INTEGRATED FERTILIZER PLANT (ODI), JORF LASFAR - OCP SA

**JESA**



# ASSET MANAGEMENT

## ASSET MANAGEMENT

### OPERATIONS-MAINTENANCE-TURNAROUND

JESA Asset Management, is a value-driven provider of fully integrated operations and maintenance services. Our integrated approach allows us to ensure asset integrity, reduce unscheduled downtime and improve operational efficiency, without compromising safety or quality.

#### Our Solutions

Fully integrated solutions to support the start-up of new facilities, to increase asset performance, and to optimize operations and maintenance strategies, including fully embracing Industry 4.0 opportunities.

#### Our Services

JESA takes on the responsibility with regard to planning, scheduling, supervision and management of all our clients assets.

#### Our Resources

People and tools are foundational to all our services and solutions. From one specialist or hundreds, JESA can quickly augment the resource pools to support any client requirements.

Working in partnership with operators and our service providers, we use

our extensive knowledge and expertise to plan and execute a wide range of operations and maintenance using best practice developed from many years experience from many sectors.

JESA provides a comprehensive operations and maintenance service portfolio across most industry sectors. Our services can be provided on a standalone basis as well as in a totally integrated approach. on-site, JESA performs best in class practices, helping to minimize risks and lower overall OPEX without compromising safety or quality.

Our team deliver full spectrum including:

- Operations
- Reliability Management
- Facility Maintenance
- Turnaround and Outages
- Planning Scheduling
- Professional Training
- Inspection and Integrity Management
- Inventory and Spare Parts Management
- Asset Performance Management (APM)
- Maintenance Execution (Mechanical , Electrical and Instrumentation)



## ASSET MANAGEMENT

### SUSTAINABLE CAPITAL SOLUTIONS

Deliver full-services (Engineering, Procurement and Construction Management) for all brownfield projects as well as small and medium-sized greenfield turnkey projects.

Our integrated engineering and construction capabilities can efficiently upgrade production installations, expand client facilities and/or keep assets compliant to the latest requirements.

Our team is integrated into owner organizations for a joint focus on execution, to ensure a quick and flexible responses to client's needs.

The sustaining Capital Solutions team assists our clients in prioritizing and defining projects, and providing small and plant project services safely to keep facilities running efficiently. Our portfolio include:

- Project Planning and Development
- Engineering and Procurement
- Construction management and Quality management
- Health, Safety and Environmental Design and Management

Our extensive experience working in live plants and brownfield environments lead to in-depth understanding of clients' operations and business needs.







**JESA**