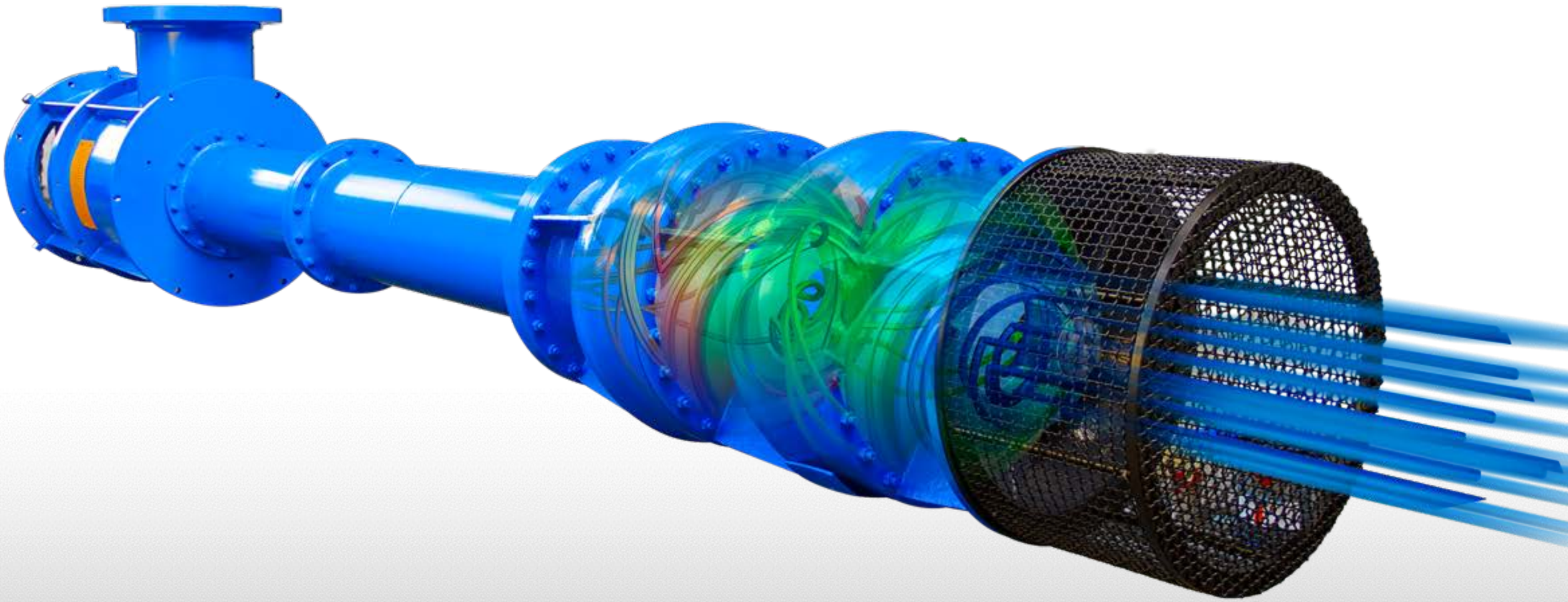
NEPTUNO PUMPS®

Innovation that flows.™

@PetarOstojic
CEO

NEPTUNO PUMPS®
Innovation that flows.™

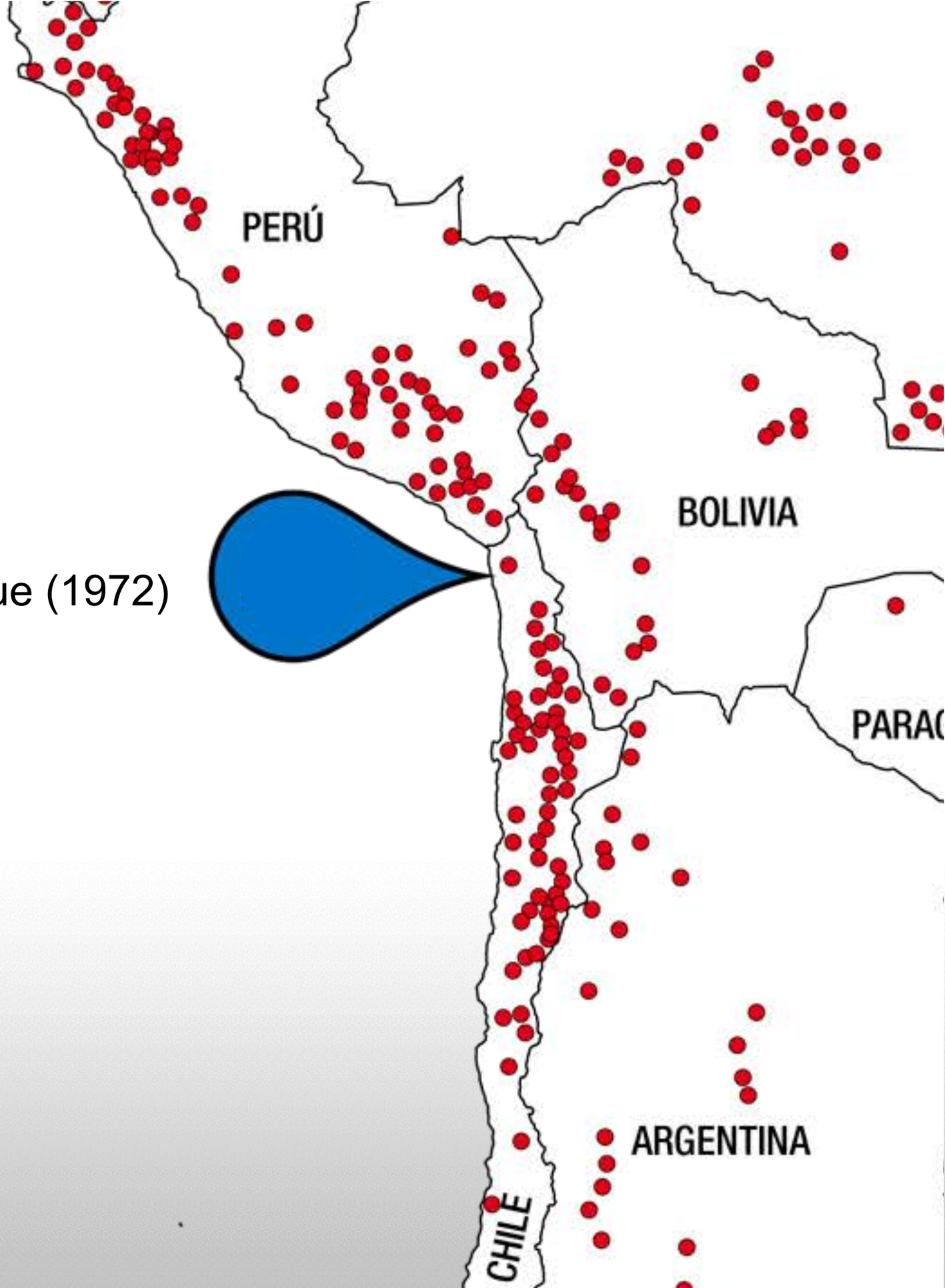
Diseño y Manufactura Chilena de Clase-Mundial



NEPTUNO PUMPS®
Innovation that flows.™

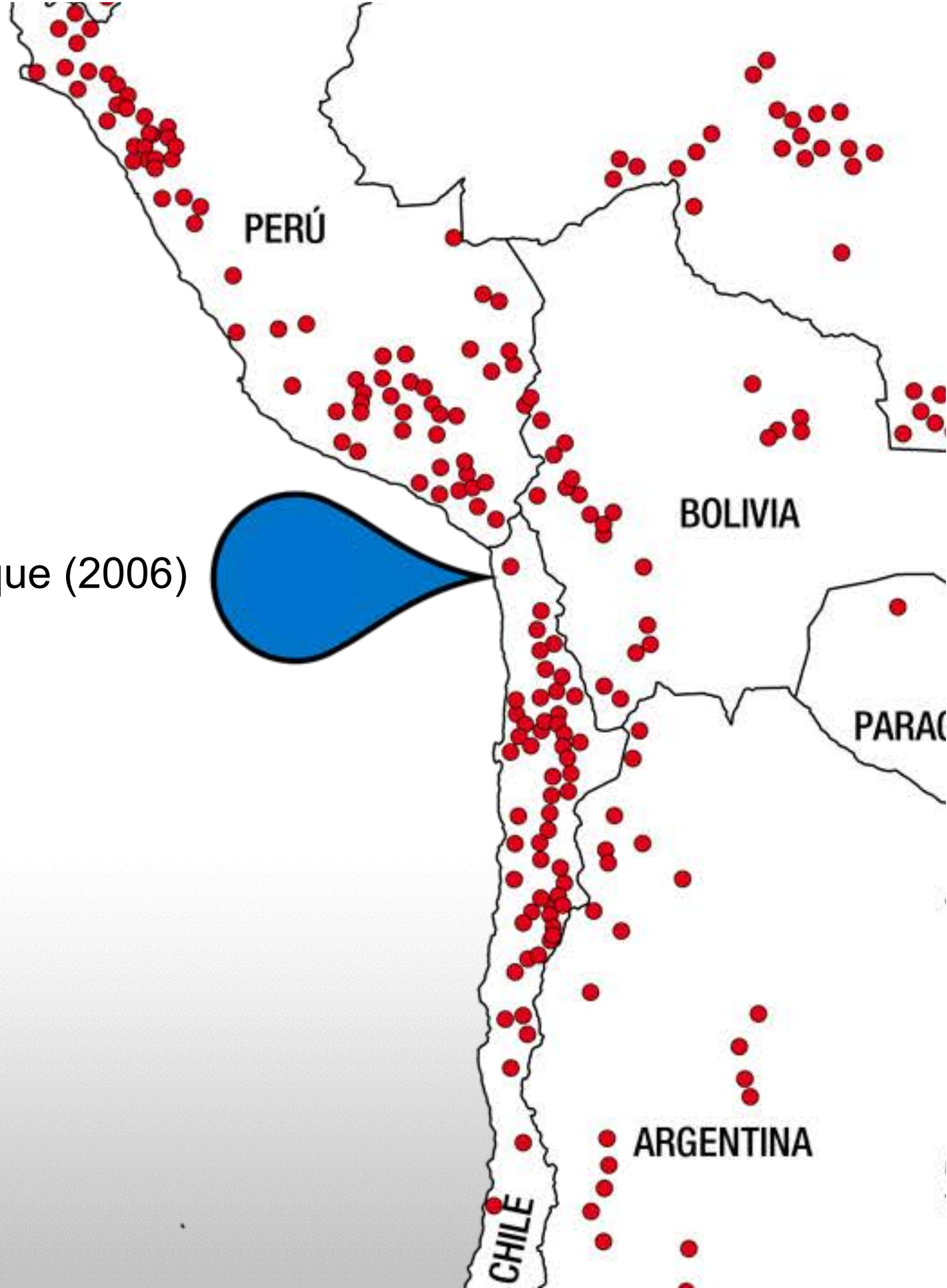
NEPTUNO PUMPS®
Innovation that flows.™

Iquique (1972)



NEPTUNO PUMPS®
Innovation that flows.™

Iquique (2006)

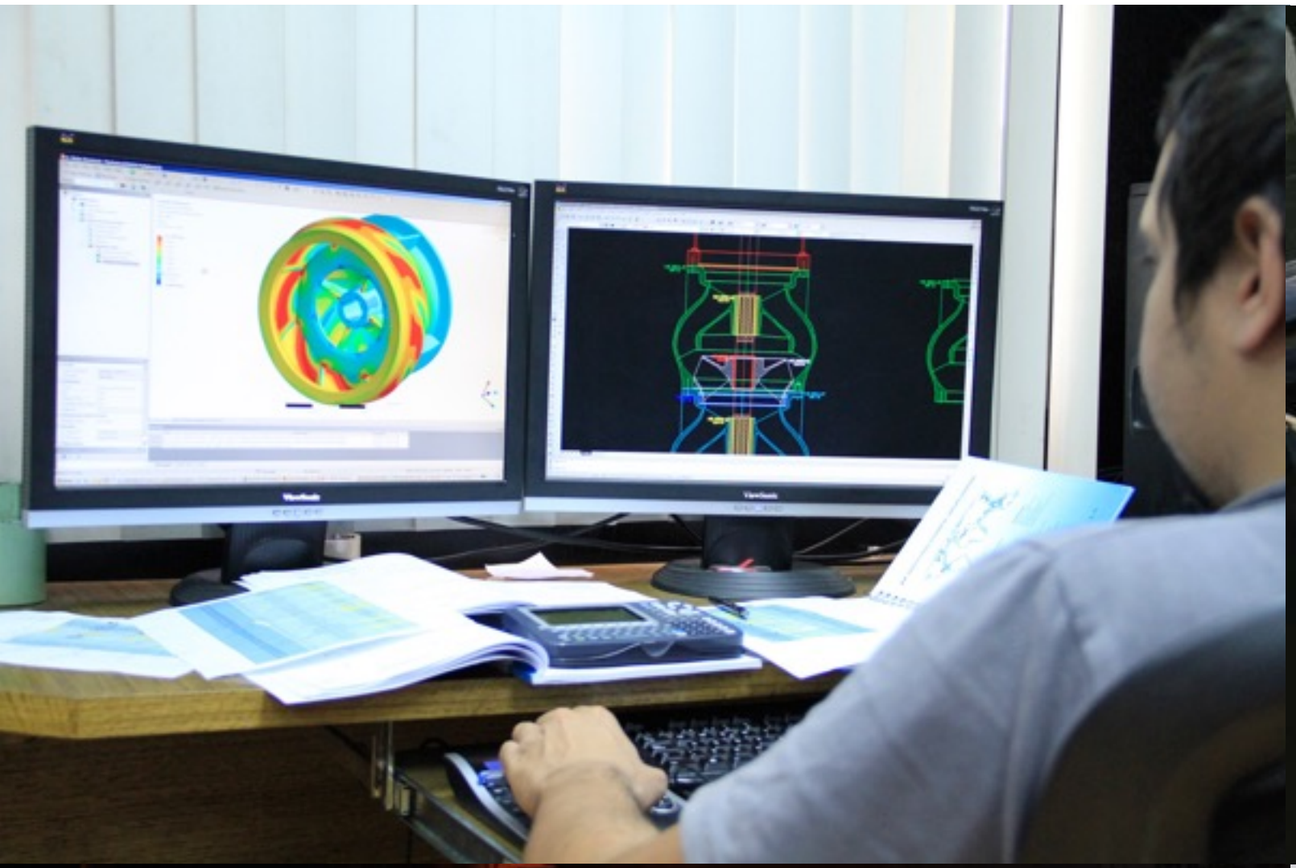


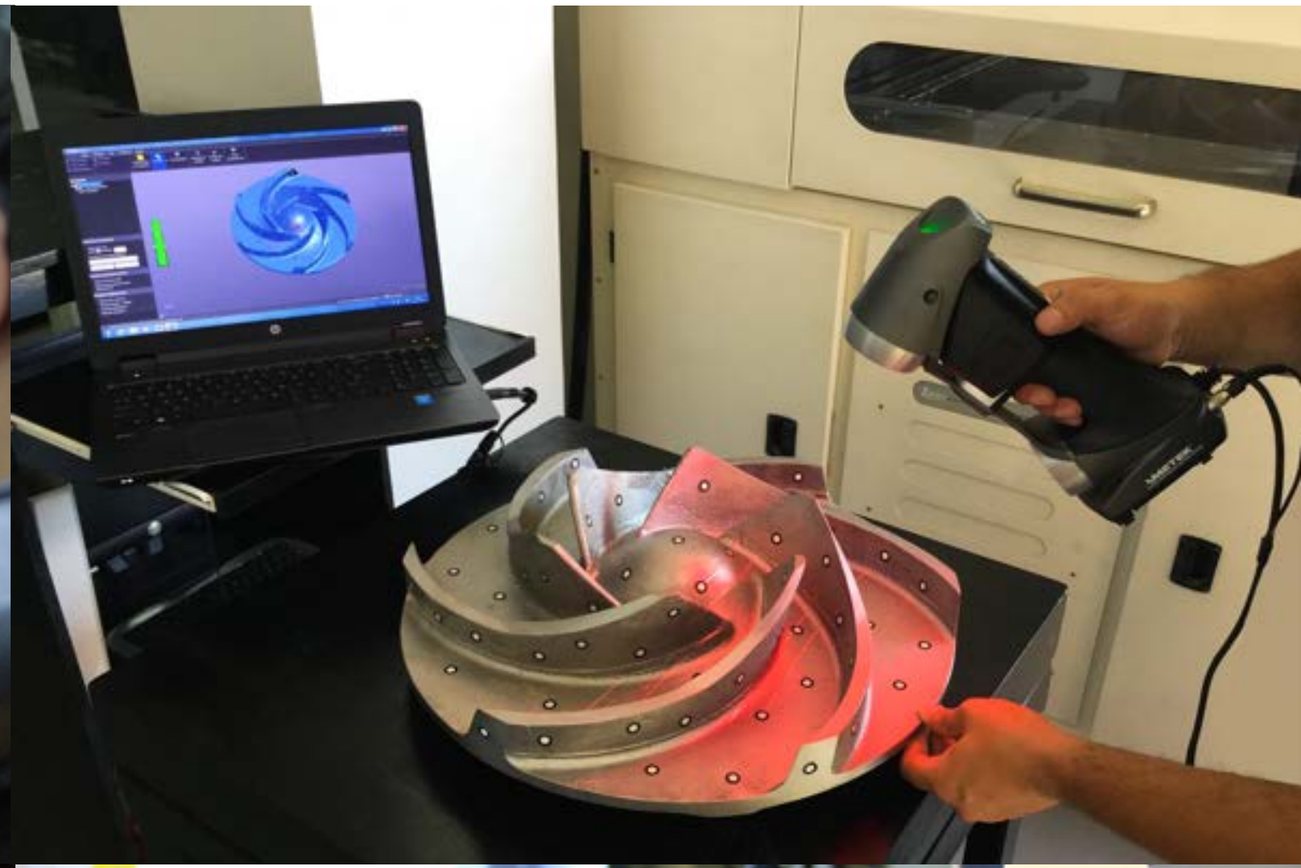
NEPTUNO PUMPS®
Innovation that flows.™

xstrata copper
BECHTEL
CODELCO
bhpbilliton
resourcing the future
MINERA ESCONDIDA
Operada por BHP Billiton
MINERA LOS PELAMBRES
Una Empresa Antofagasta Minerals
COLLAHUASI
HATCH
ANGLO AMERICAN
amec
SOUTHERN COPPER
EL ABRA
SINCLAIR KNIGHT MERZ
SKM
GRUPOMEXICO
BRASS
BRASS Chile S.A.
BARRICK
ENAMI
EMPRESA NACIONAL DE MINERIA
AkerSolutions
ANTOFAGASTA MINERALS
CAP MINERIA
Cerro Verde
MINERA ESPERANZA

Q. B.
SNC·LAVALIN
LOMAS BAYAS
bhpbilliton
Cerro Colorado
ELÉCTRICA GUACOLDA
Ausenco
FLUOR
MINERA ALUMBRERA
YMAD - UTE
HMC
E·CL
Minera candelaria
FREEPORT-McMoRan
COPPER & GOLD
Teck
MANTOS DE ORO
endesa chile
Altonorte
MINERA MICHILLA S.A.
SQM
THE WORLDWIDE BUSINESS FORMULA
MITSUI & CO., LTD.
KINROSS
GOLDCORP
MINERA GABY S.A.
CMP

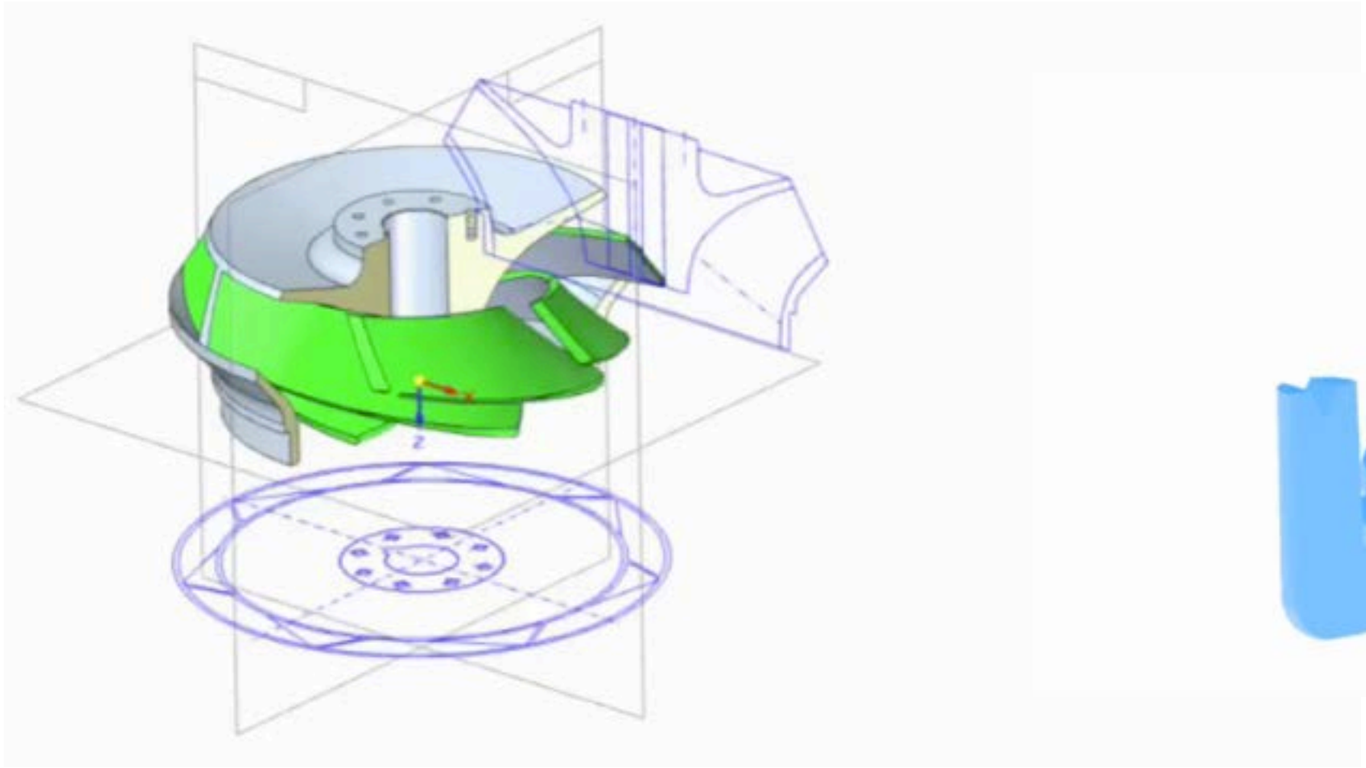
NEPTUNO PUMPS®
Innovation that flows.™





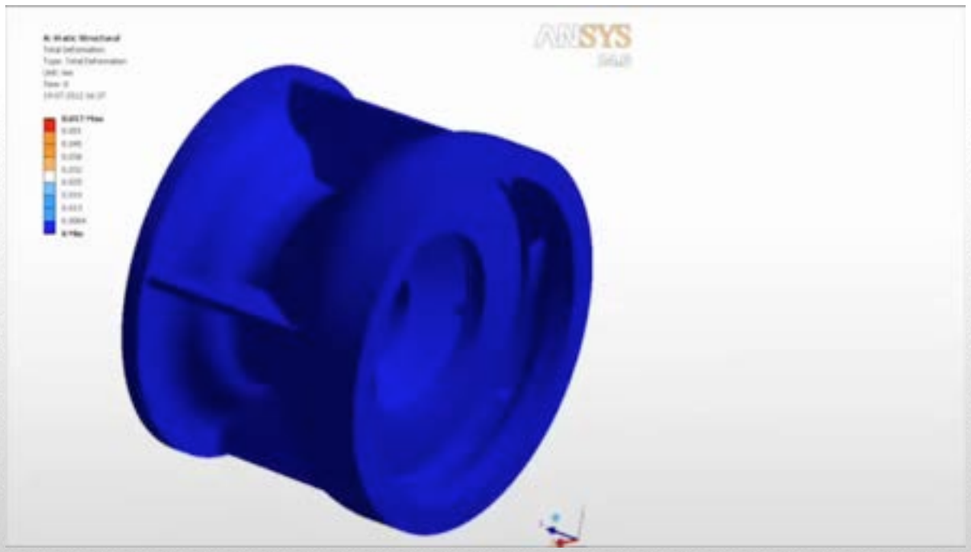
NEPTUNO PUMPS®
Innovation that flows.™

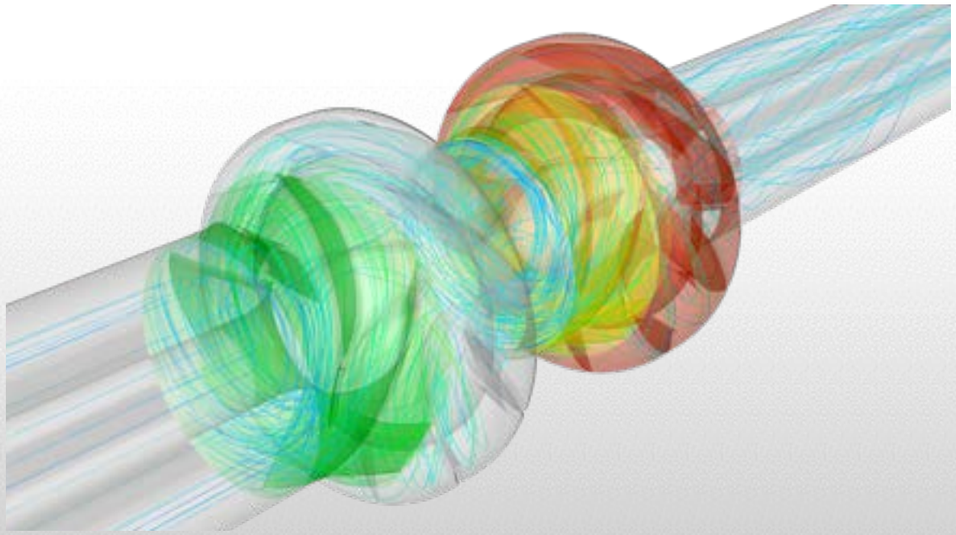
Diseño e Ingeniería



- Diseño Mecánico/Hidráulico 2D/3D

- Simulación de Fundición, Enfriamiento y Solidificación

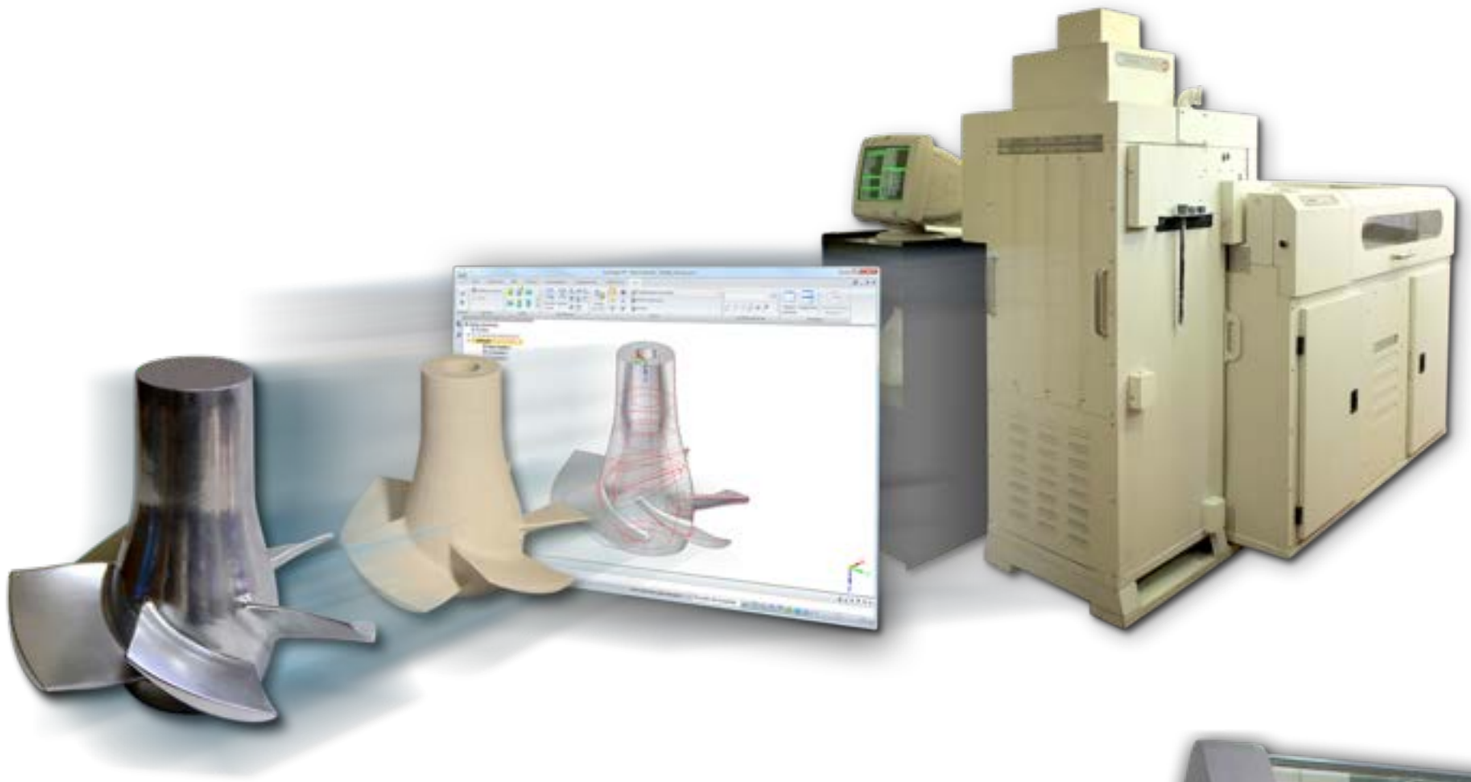




- Simulación de Dinámica de Fluidos Computacional y Análisis Elementos Finitos

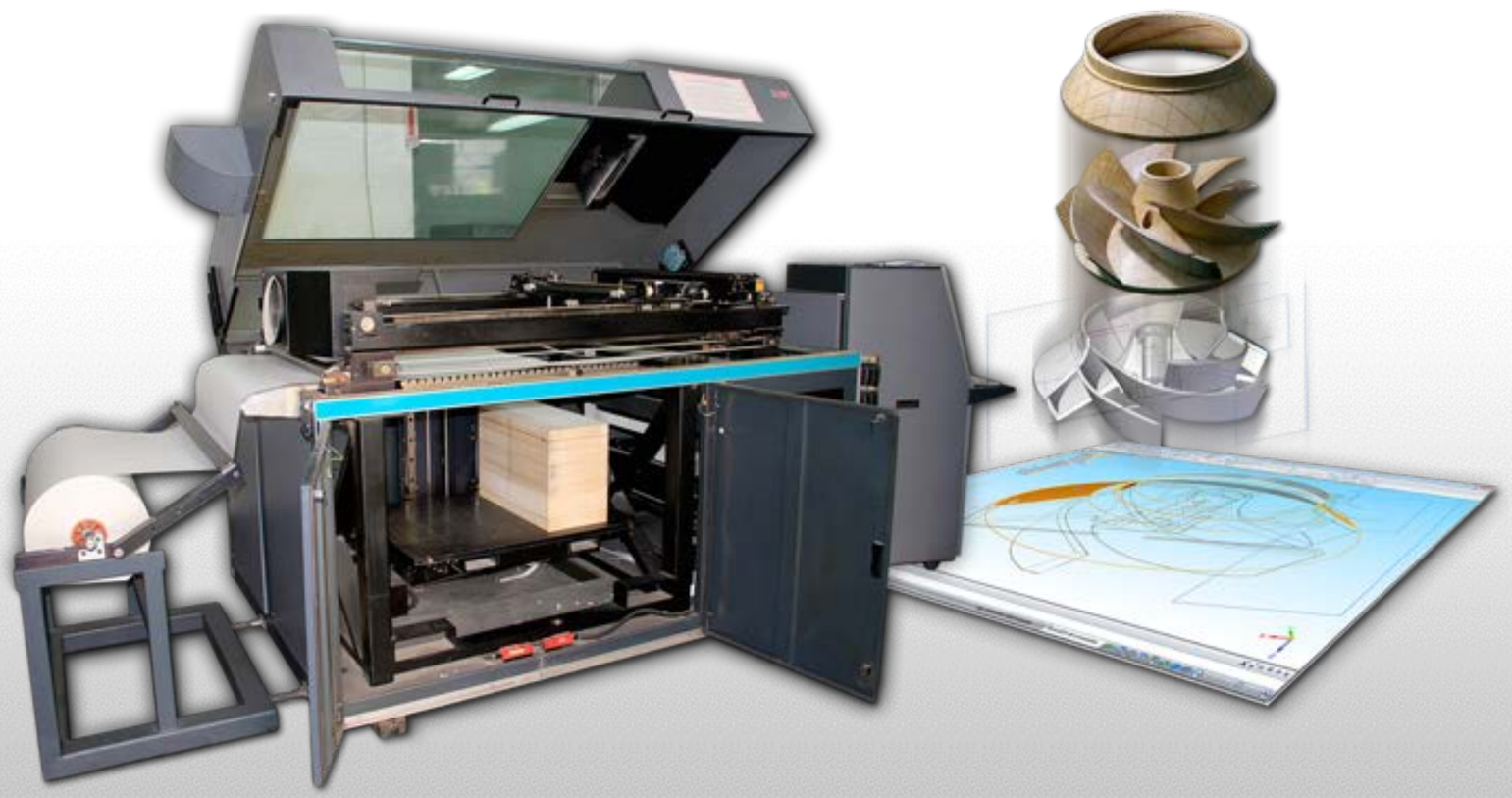
NEPTUNO PUMPS®
Innovation that flows.™

Impresión 3D



3D PRINTING (3DP)

LAMINATED OBJECT MANUFACTURING (LOM)



NEPTUNO PUMPS®
Innovation that flows.™

Ingeniería Inversa

NEPTUNO PUMPS®
Innovation that flows.™

NEPTUNO PUMPS®
Innovation that flows.™

Pumps and circular economy
January 2016

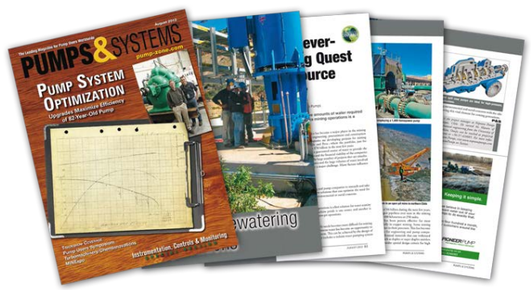
Axial thrust in vertical turbines
December 2015

Energy efficient pumps help fight climate change
August 2015

Mining industry gets pump improvements
October 2014

Energy Efficient Vertical Turbine Pumps Promote Sustainable Mining Efforts
January 2014

Optimización Energética y Disminución de emisiones de CO2
January 2014



The Never-Ending Quest for Source Water
March 2012

Improving the Efficiency of Industrial Pumps for the Mining Industry
October 2012

Water Management for Cooper Mining
August 2012

Re-powering Water Reclaim Systems
May 2012

Reclaim Water Pumping
by Neptuno Pumps®
March 2012

South America for Growth and Diversity
November 2011

NEPTUNO PUMPS®
Innovation that flows.™

PUMP INDUSTRY AWARDS

NEPTUNO PUMPS®
Innovation that flows.™

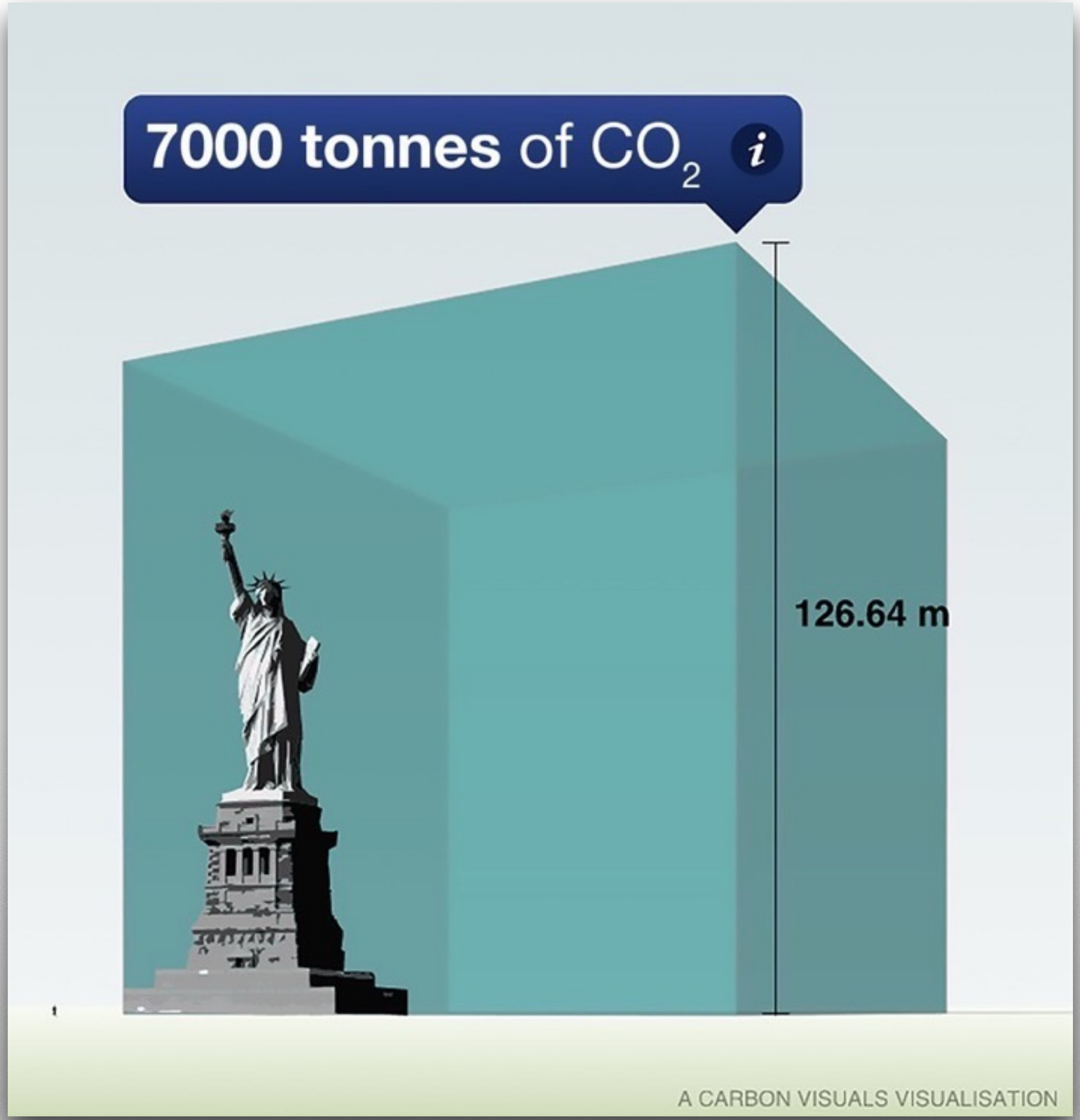
Sistema de Agua Recuperada
Los Pelambres

+ 31% Caudal

-34% Energía

US$ 1.500.000

NEPTUNO PUMPS®
Innovation that flows.™



NEPTUNO PUMPS®
Innovation that flows.™

PIA WINNER
PUMP INDUSTRY AWARDS 2013


Applications

Mining

Re-powering water reclaim systems

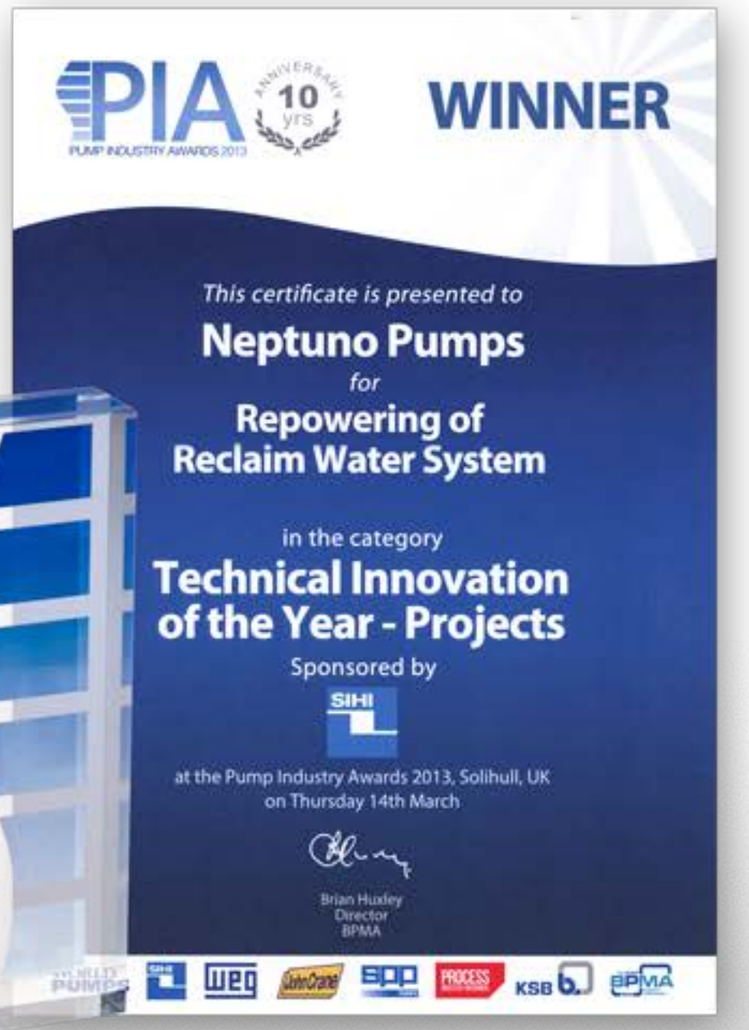
In the mining industry, production is directly related to the plant's total pumping capacity, and reclaim systems are the main source of water. With the pressure on to improve processes, Petar Ostojic discusses how pump manufacturers can help mining companies re-power their reclaim water systems with custom engineering solutions, improving pump capacity and reducing energy consumption.

In recent years, good copper prices have motivated the world's biggest mining companies to improve processes, increasing production with the shortest payback period and minimum operational intervention. Re-powering reclaim water pumping systems represents a huge opportunity for pump companies to incorporate engineering consulting to their service portfolio, providing fast and custom-engineered solutions to their clients, so optimizing efficiency and reliability.

The pumping system

Los Pelambres Mining Company, based in Chile, has one of the ten largest copper deposits in the world. In 2011 the company

Applications


PIA ANNIVERSARY 10 yrs
PUMP INDUSTRY AWARDS 2013

WINNER

This certificate is presented to

Neptuno Pumps

for

Repowering of Reclaim Water System

in the category

Technical Innovation of the Year - Projects

Sponsored by

SIHI

at the Pump Industry Awards 2013, Solihull, UK
on Thursday 14th March

Brian Huxley
Director
BPMA

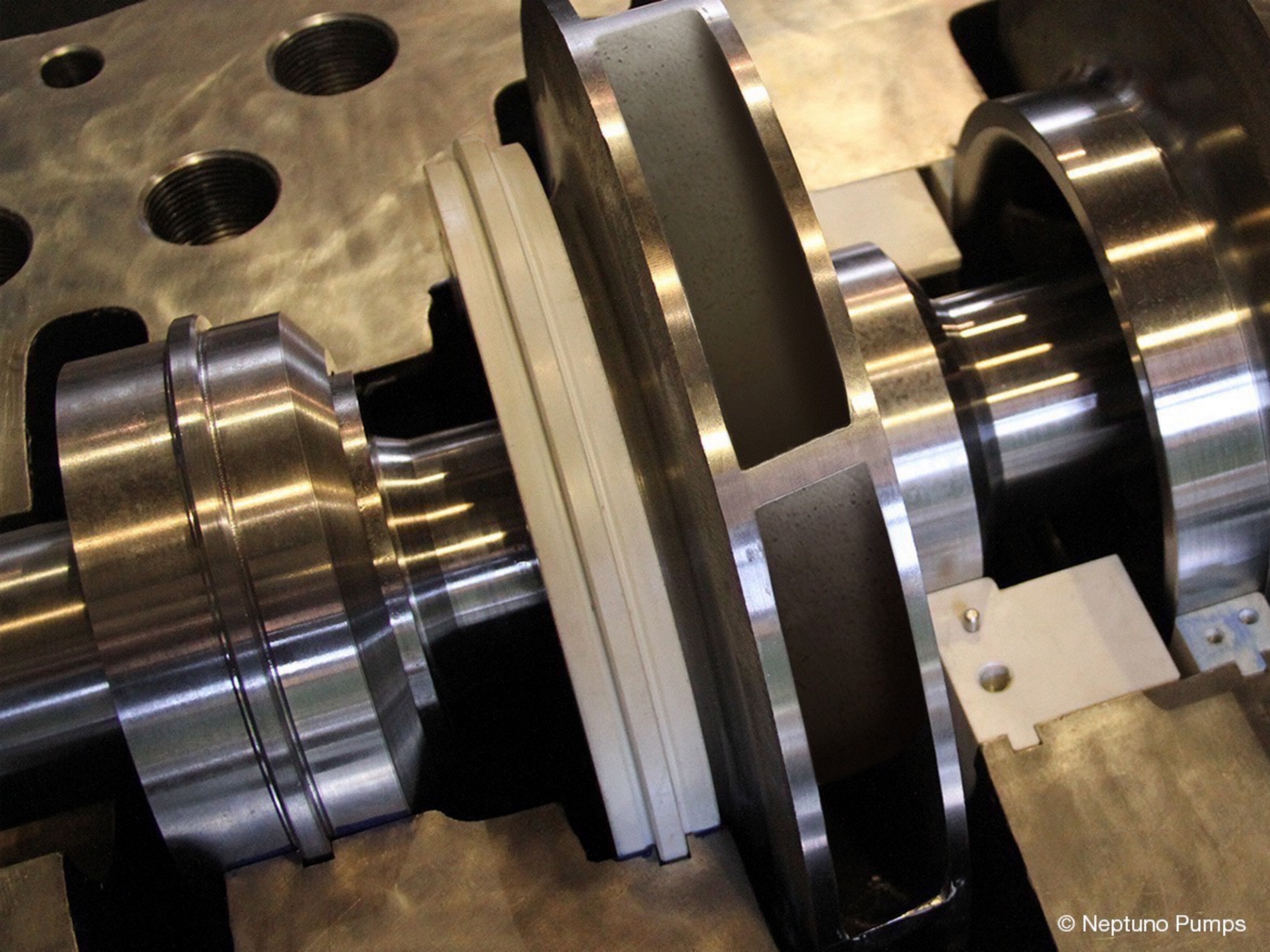
NEPTUNO PUMPS®
Innovation that flows.™

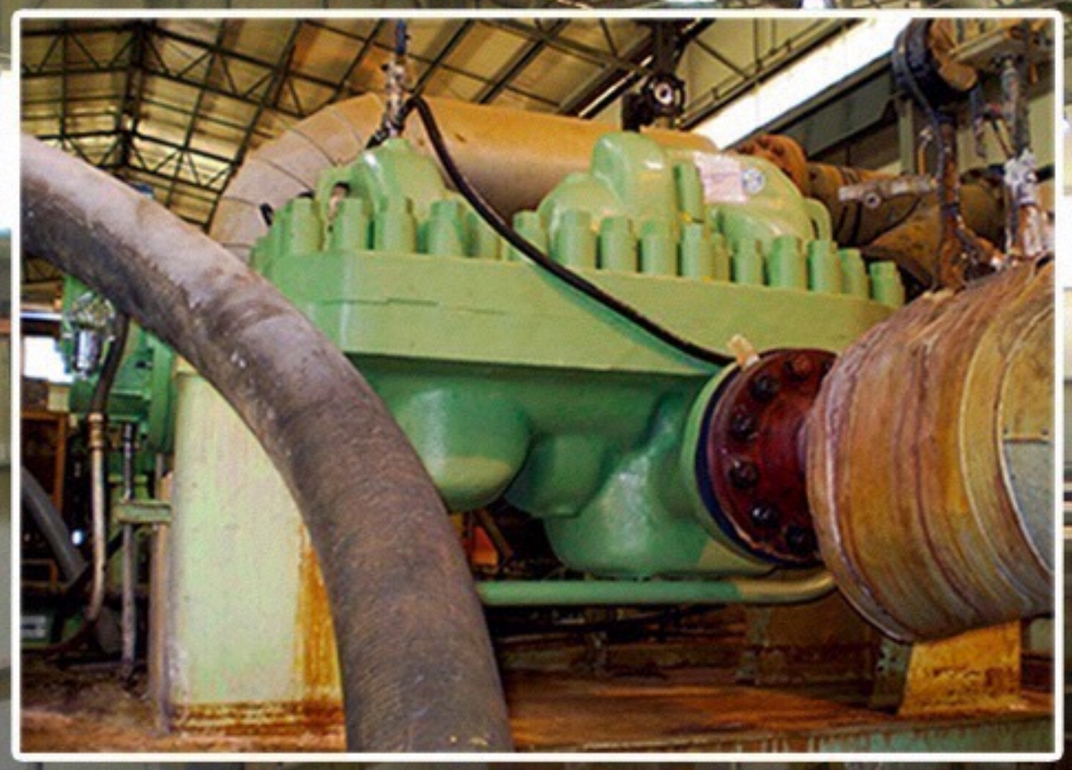

Instituto de Ingenieros de Chile
Fundado en 1888
Confiere el Premio
Ramón Salas Edwards
Correspondiente al año 2013 al Ingeniero Don
Y le otorga este Diploma de Honor ... al progreso
De la Ingeniería y sus ...tiva.
Santia...
Iván Alvarez V.
Secretario

Sistema de Agua Fresca Collahuasi

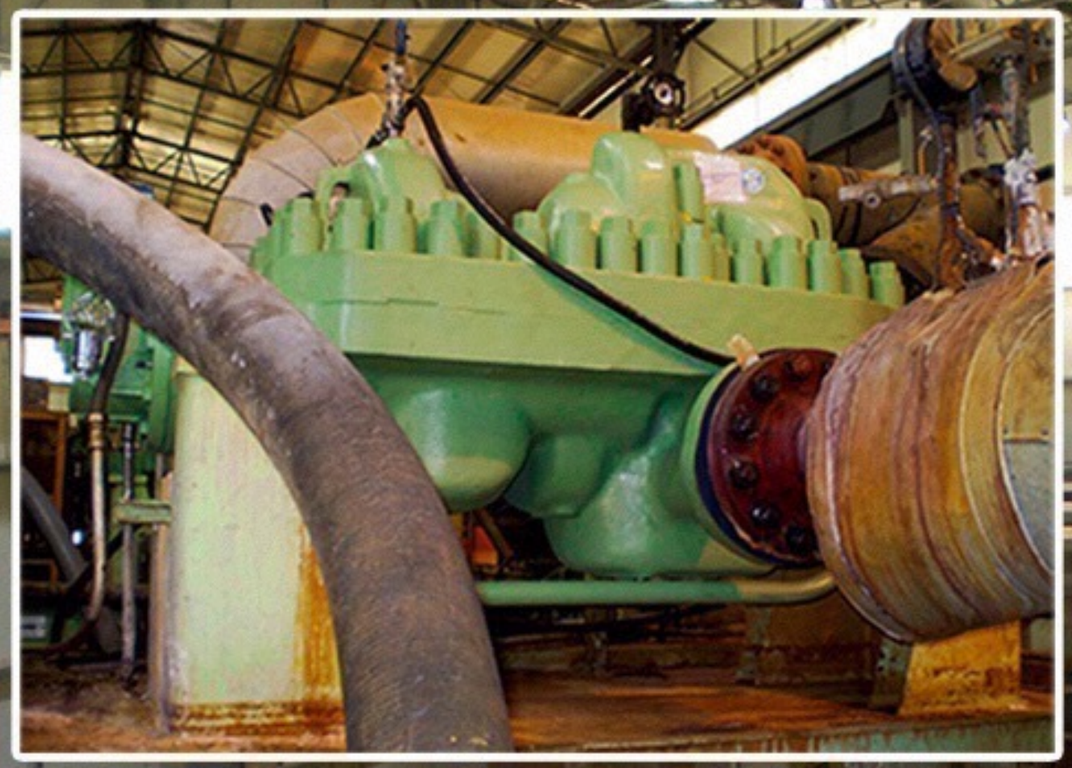
4,500 m.s.n.m.

70,000 (mg/l) Cl





+600% Disponibilidad



-US$650.000/año

NEPTUNO PUMPS®
Innovation that flows.™

PUMP INDUSTRY AWARDS 2015 WINNER


Feature

WORLD PUMPS October 2014

Construction & mining

Mining industry gets pump improvements

Plant in one of the biggest open-pit mine operations on the planet have to handle the exceptionally poor and aggressive quality of water. This article discusses how a combination of a pump shaft upgrade and the use of non-galling advanced thermoplastic represented a huge improvement in the pump performance.

For any new project, engineering and mining companies select their pumping equipment for some very specific duty conditions and fluid characteristics. However, when months and years go by, some of these variables start changing, such as the pipeline internal diameter or the percentage of solid concentration in the fluid, which can impact pumps heavily and even experience catastrophic failures if no corrective measures are taken. This is certainly not desirable for the end-user, as it operation does not perform as planned, nor the pump manufacturer that usually receives negative reviews of its product.

It is estimated that annual maintenance and operations on pumps is 10% greater than any other type of rotating machinery and, furthermore, that they represent 25 to 32% of total plant motor energy, making them a key equipment for any mining process. However, as shown in our award-winning article "Re-powering water reclaim systems" (World Pumps, Number 547, May 2012), there is a new way of doing things in the mining industry, with its main focus in efficiency, sustainability and cooperation between end-user and pump provider that allows to innovate and improve their process, and this project is another example of that.

Corrosive water in the Andes

Compañía Minera Doña Inés de Collahuasi is thought to be the world's fourth largest copper mine and it counts as one of the biggest open-pit mine operations on the planet. It is located at 4,400 m above sea level in the Andean plateau of northern Chile's Tarapacá Region. A few years ago, the company incorporated a new source of fresh water to its process. However this water was characterized by its high levels of sulphides and chlorides, with values of 6,300 (mg/l) and 50,000 (mg/l) respectively, making it one of the few places in the world with this poor and aggressive quality of water at such high altitude above sea level.

The pumping system

Before the incorporation of this highly corrosive water to their process, the company pumped water to a reservoir tank connected through a manifold to a 17,940 (hp) booster pumping station, as shown in Figure 1, with a total of ten Neptuno Pumps HA475 axial split case multistage pumps. Each pump had a capacity of 480 (m³/h) and a total dynamic head of 700 (m). These pumps were selected for pumping clean water with low sulphide and chloride concentrations, as specified in the original project; therefore they were fabricated in accordance to the original quality of water which, at that time, only required metallurgy of standard cast steel, operating with optimal performance and reliability.

Figure 1. Booster station equipped with ten Neptuno Pumps HA475 axial split case multistage pumps with a total power of 17,940 (hp).

www.worldpumps.com ©2012 1742-14 © 2014 Elsevier Ltd. All rights reserved

NEPTUNO PUMPS®
Innovation that flows.™

TATA
TATA STEEL

FLOWSERVE

GE Oil & Gas

KSB

wilo

GRUNDFOS

SULZER

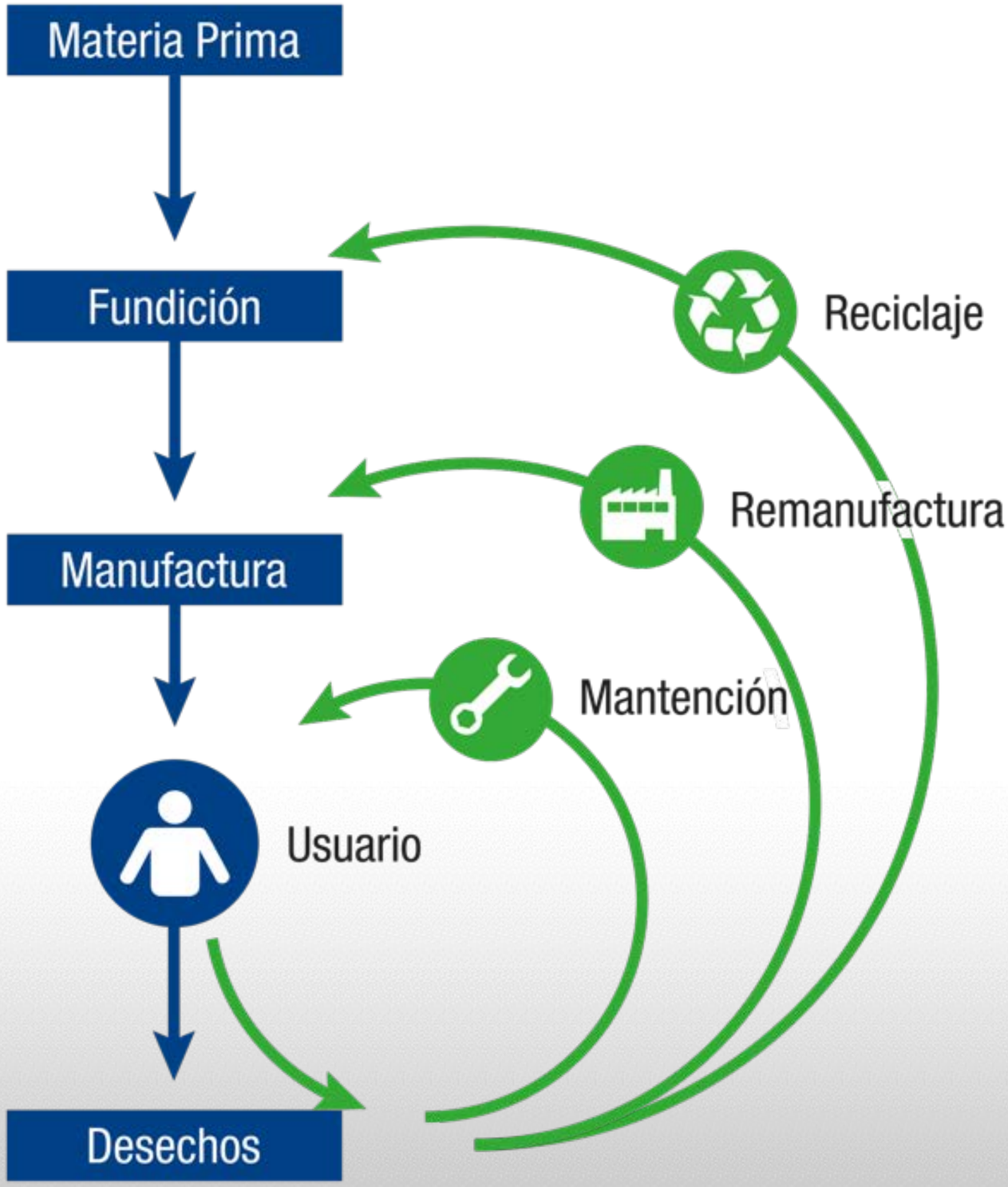
ITT

Ensival Moret
A Moret Industries Company

400(t)/Mes

NEPTUNO PUMPS®
Innovation that flows.™

Economía Circular




2

La Remanufactura es el nuevo Reciclaje

NEPTUNO PUMPS®
Innovation that flows.™


NEPTUNO PUMPS
Innovation that flows
"Diseñamos con la tecnología de simulación CFD & FEA más avanzada del mundo."
ANSYS
NEPTUNO PUMPS
100%
Diseños Modulares

60%

Materiales Reciclados

-70%

Desechos y Emisiones CO_2

Neptuno Pumps

Close

Categories:
Other

Website:
www.neptunopumps.com

Circular activity:
Design & Materials

Sectors:

Neptuno Pumps designs and manufactures custom engineered pumps for the world'...
Read more >

Search the Network Map:

Category

What i

All

Sector

All

Circular activity

All

or, Search by name

Search...

Rese

How can I be added to the

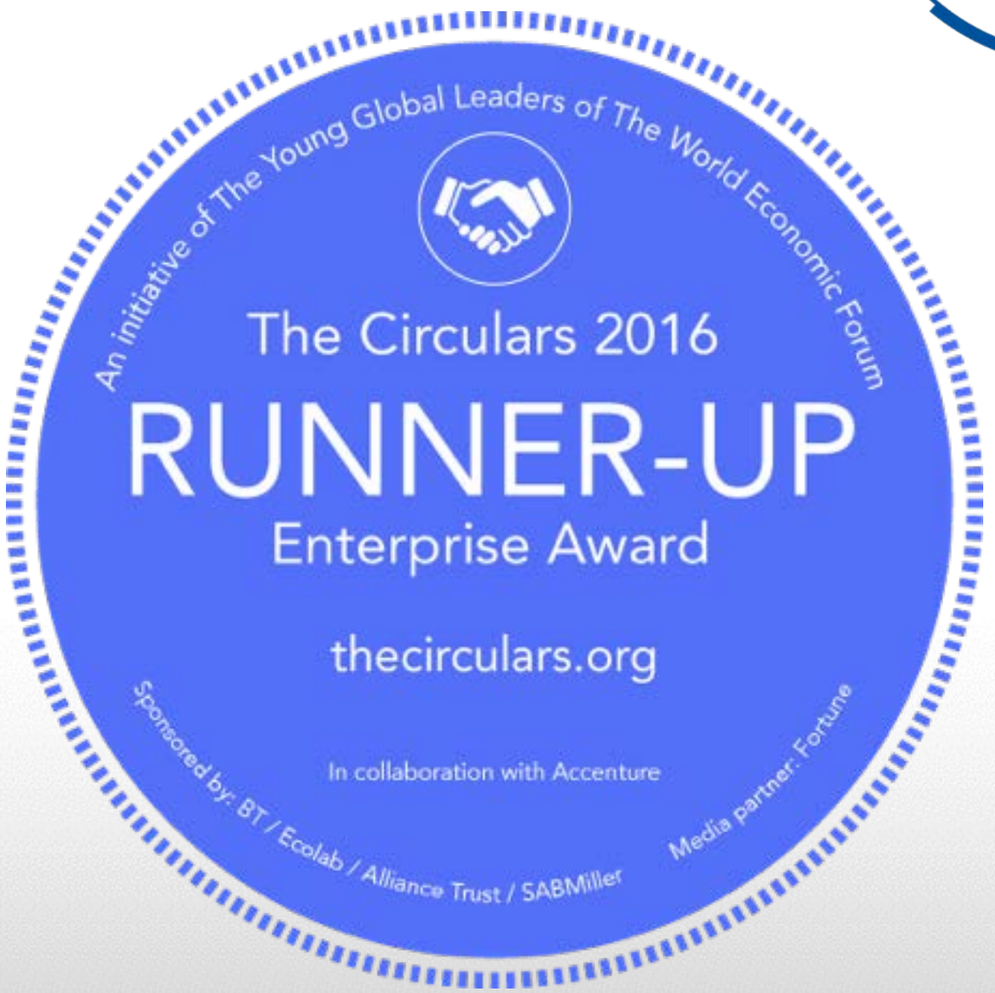
Report a

NEPTUNO PUMPS®
Innovation that flows.™

WORLD ECONOMIC FORUM

NEPTUNO PUMPS®
Innovation that flows.™

WORLD ECONOMIC FORUM



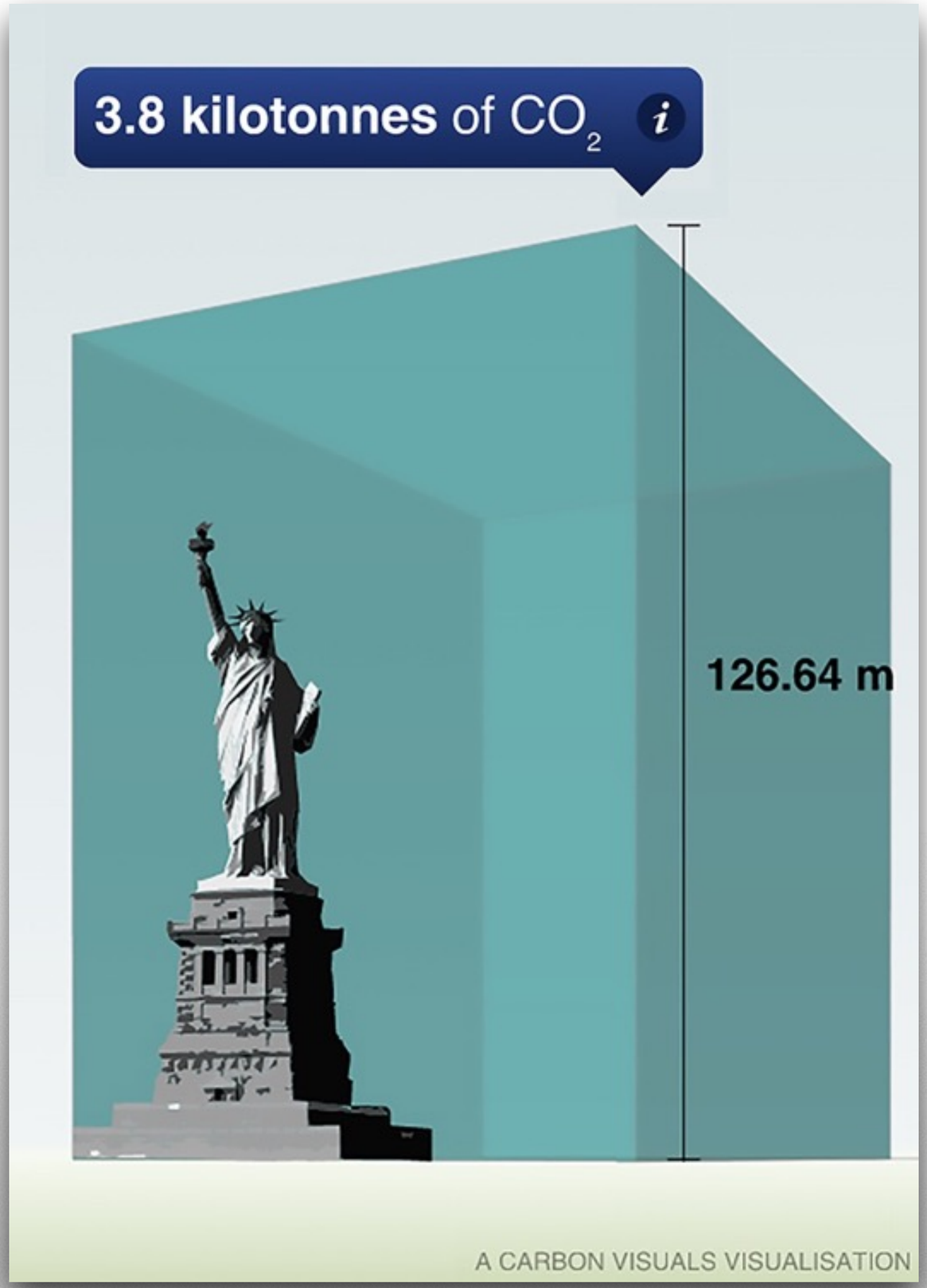
Sistema de Agua Fresca
Los Pelambres

- 15% Energía

US$ 580.000

-70% Desechos

NEPTUNO PUMPS®
Innovation that flows.™



NEPTUNO PUMPS®
Innovation that flows.™

PUMP INDUSTRY AWARDS 2016 WINNER

NEPTUNO PUMPS®
Innovation that flows.™

3er Ranking de Proveedores de la Industria Minera en Chile

5º Ranking de Proveedores de la Minería

NEPTUNO PUMPS®

Innovation that flows.™

www.neptunopumps.com

@neptunopumps