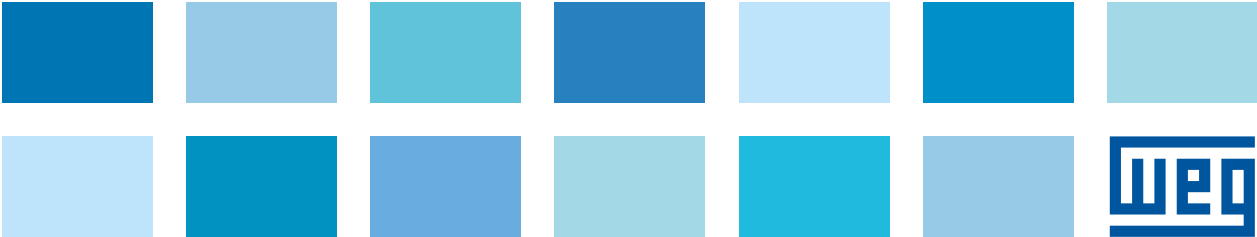
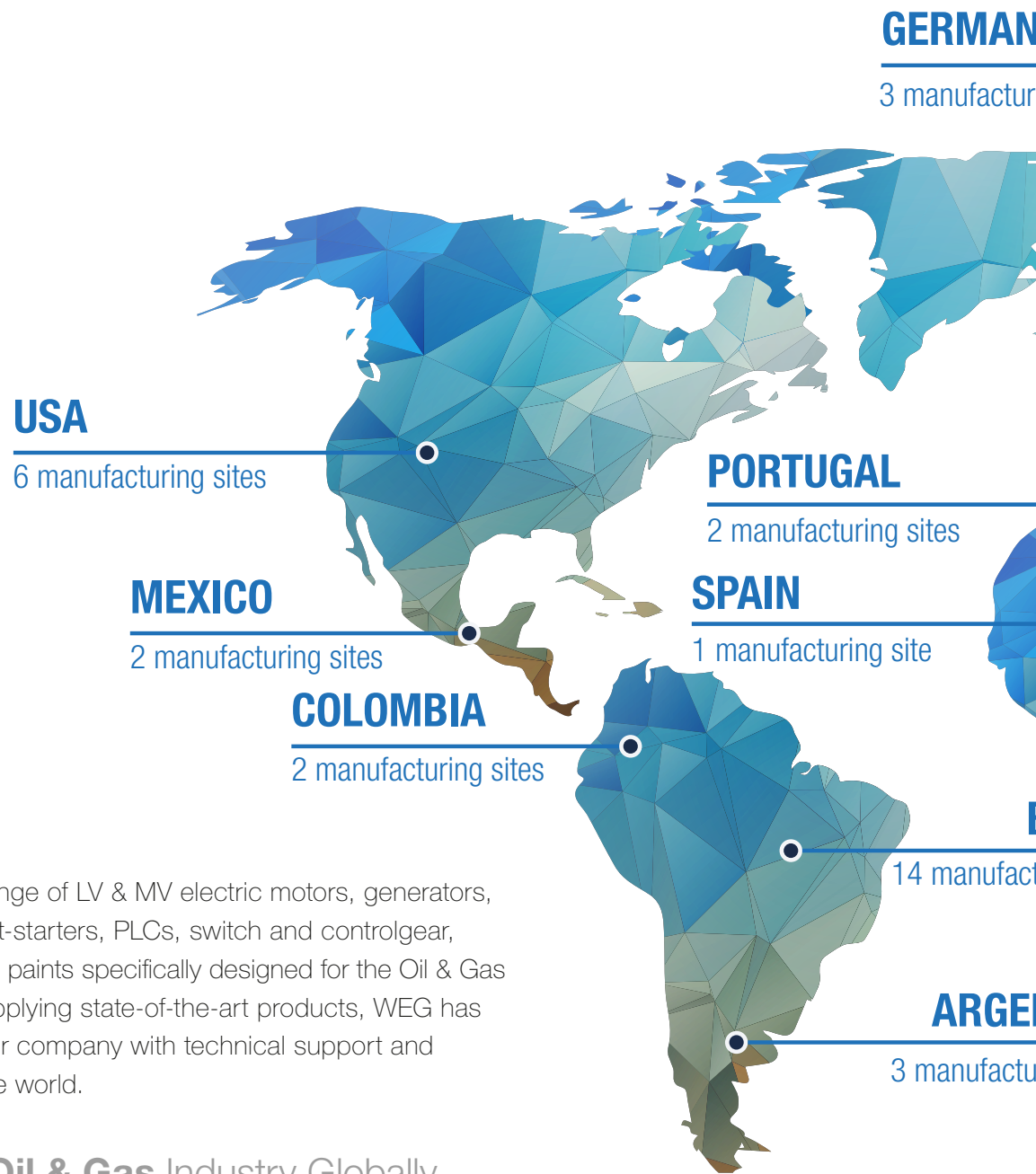




# Solutions for Oil & Gas Industry



# The WEG Group



At WEG you'll find a full range of LV & MV electric motors, generators, variable speed drives, soft-starters, PLCs, switch and controlgear, transformers and industrial paints specifically designed for the Oil & Gas Industry. In addition to supplying state-of-the-art products, WEG has the expertise to serve your company with technical support and prompt service all over the world.

## WEG Serves the Oil & Gas Industry Globally

WEG is a globally-recognized supplier of premium electric products for the industry. Our global structure allows us to be closer to our Oil & Gas customers. Over 32 subsidiaries established in key countries are prepared to provide you with technical and commercial support; our manufacturing plants strategically located in the main markets can serve you with short deliveries; and our network of over 1,250 Authorized Service Agents located in the five continents are fully equipped to give you prompt after sales and service support.

### WEG at a Glance

Manufacturing plants in

**12** countries



**R\$**  
**9,5** billion

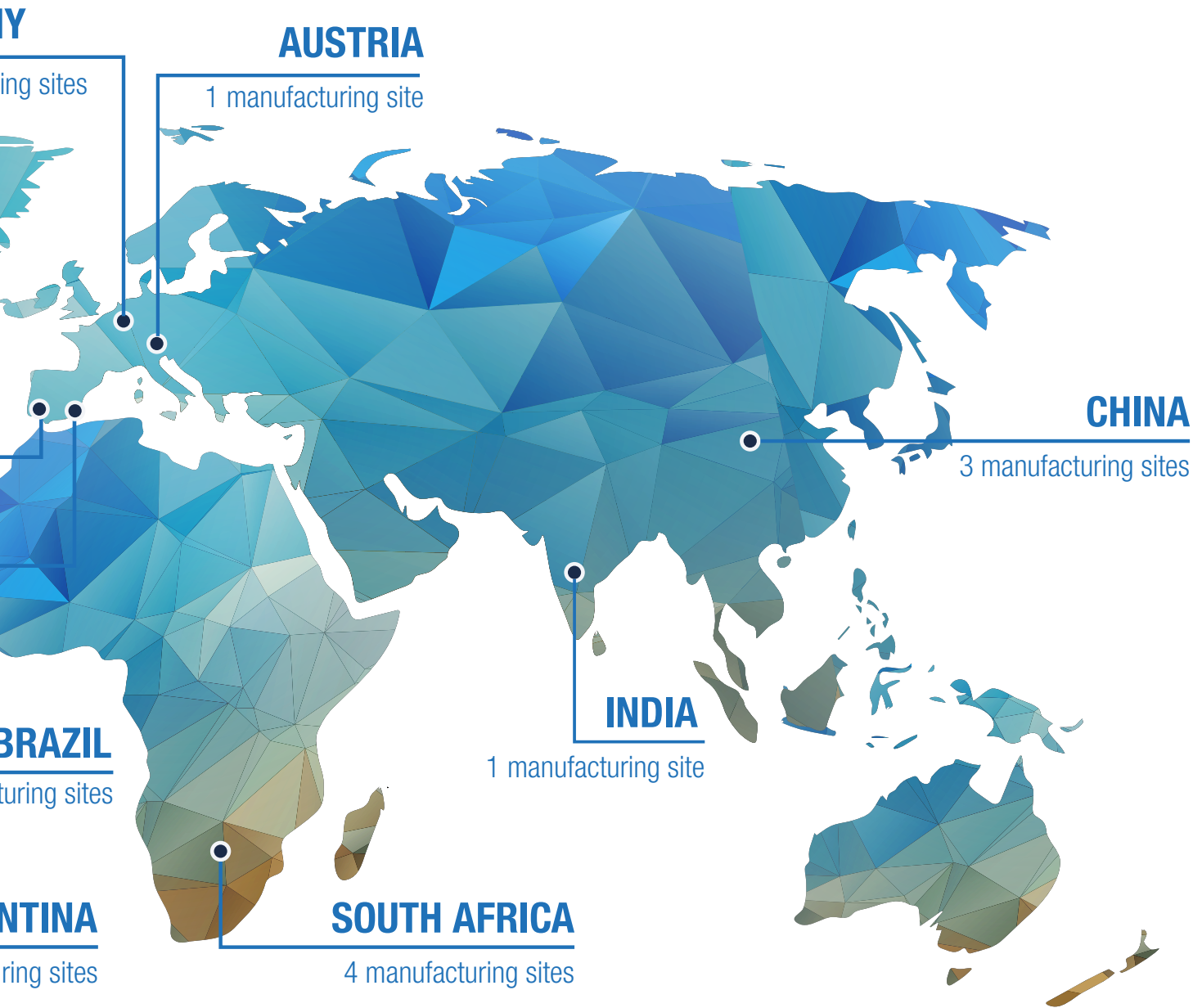


yearly turnover (2017)



Over

**30k**  
employees



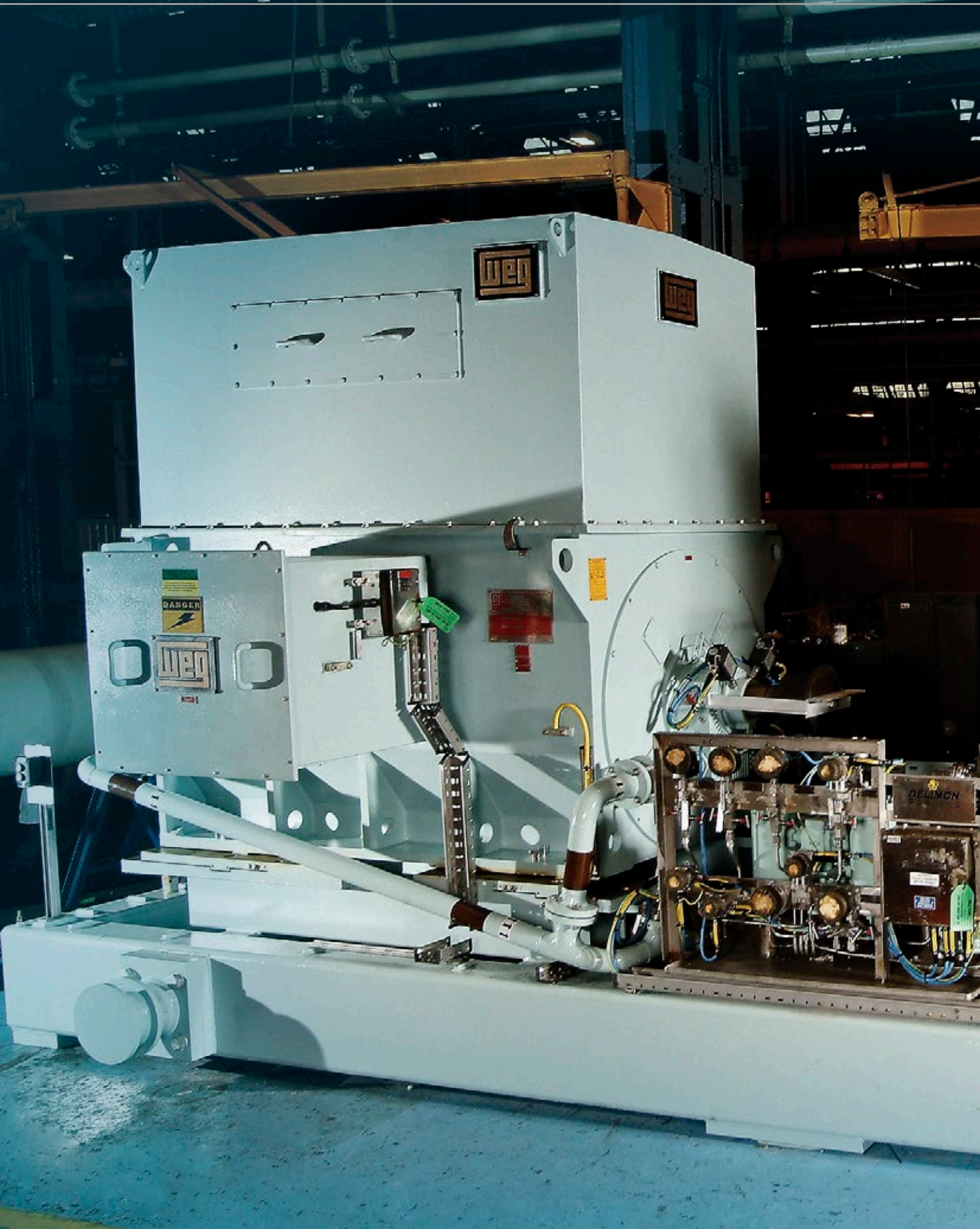
### Global Product Certifications



### Marine Approvals



# Electric Motors



## Efficiency and Reliability for the Industry

Manufacturing state-of-the-art LV & MV electric motors is what WEG has been doing since its foundation. Regardless of the market segment, the company continues to dedicate extensive resources and effort in order to produce long-lasting electric motors so as to ensure reliability of production for your industry. Special attention has been given to the design of suitable motors for the Oil & Gas Industry in various parts of the world. This is what sets WEG apart as the manufacturer of industrial motors compliant with the most demanding Oil & Gas application requirements. Flexible mechanical design associated with high operational reliability make our motors easy to be installed with extremely low downtime and service maintenance.



Our team of engineers has conducted extensive technical research to produce suitable products complying with the most respected industry standards such as API 541, API 546, API 547 and IEEE 841, according to both NEMA or IEC.

# Electric Motors



## W22

### LV / MV General Purpose TEFC Motors

Output: up to 550 kW  
Voltage: up to 6,600 V

*\* NEMA or IEC designs*



## W22Xn

### LV Non-Sparking TEFC Motors

Output: up to 500 kW  
Voltage: up to 1,000 V

*\* NEMA or IEC designs*



## W22Xd

### MV Flameproof TEAAC Motors

Output: up to 4,500 kW  
Voltage: up to 11,000 V

*\* NEMA or IEC designs*



## TGA & MGV Lines

### High Torque Motors for Drilling

Output: up to 1,120 kW  
Voltage: up to 690 V  
Cooling: by ducts or blower

*\* NEMA or IEC designs*



## WGM20

### LV / MV General Purpose Water Jacket Cooled Motors

Output: up to 2,800 kW  
Voltage: up to 4,160 V

*\* NEMA or IEC designs*



**HGF**

**LV / MV General Purpose TEFC Motors**  
**LV / MV Non-Sparking TEFC Motors**  
**LV / MV Increased Safety TEFC Motors**

Output: up to 2,800 kW  
Voltage: up to 11,000 V

*\* NEMA or IEC designs*



**W22Xd**

**LV Flameproof TEFC Motors**

Output: up to 1,400 kW  
Voltage: up to 1,100 V

*\* NEMA or IEC designs*



**W22Xd**

**MV Flameproof TEFC Motors**

Output: up to 1,600 kW  
Voltage: up to 11,000 V

*\* NEMA or IEC designs*



**W60/Master Line**

**MV General Purpose Motors**  
**MV Non-Sparking Motors**  
**MV Increased Safety Motors**  
**MV Pressurized Motors**

Output: up to 50,000 kW  
Voltage: up to 14,400 V  
Cooling: open, air or water cooled

*\* NEMA or IEC designs*



**Synchronous Motors**

**MV General Purpose Motors**  
**MV Pressurized Motors**

Output: up to 110,000 kW  
Voltage: up to 14,400 V  
Cooling: open, air or water cooled

*\* NEMA or IEC designs*

# Automation Technologies





## Industrial Systems **Enhancing Productivity**

Advanced built-in technology for speed variation; compact solutions for short-circuit protection and overload conditions; high short-circuit breaking capacity; reliability and precision on monitoring, operation and protection of electric motors; wide range of accessories and global Certifications. These are some of the features and benefits offered by WEG.

Counting on a team of senior engineers with extensive market and design experience, the company enjoys a comfortable position as a manufacturer and supplier of variable speed drives, soft-starters, motor control centers, motor starters, motor circuit breakers and an extensive series of motor control and protection products for the Oil & Gas applications.

### MTW



### MV Switchgear

Developed for the various market segments, WEG electric panels meet the highest quality and performance requirements, being designed with a high standardization rate. They offer simple assembly, installation, maintenance, future expansions and interchangeability. The products are factory assembled and tested for 2.3 kV to 36 kV voltages and were developed to meet the requirements of 62271-200 standard, while preserving the flexibility in adapting to the different characteristics demanded by the market.

### LCW



### LV Switchgear

The WEG LV Switchgear are designed according to IEC 60439-1 to meet specifications of broad market segments for high operational current, high levels of short circuit interrupting rates and equipment protection complying with international quality and safety requirements. Designed with a high level of modularization, this product allows easy assembly, installation, maintenance and future expansions. The WEG Load Center is equipped with fixed, plug-in or removable circuit breakers and/or fixed switch-disconnector intended to supply MCCs loads and other electric panels.

- Voltage class: 690/1,000 V
- Rated currents: 6,300 A (horizontal busbar) 4,000 A (vertical busbar)
- Short-circuit current: 50 kA; 65 kA; 80 kA
- Option for arc-resistant

### CCM



### LV Motor Control Centers

The WEG LV MCCs are designed with a high level of standardization. These products provide easy assembly, installation, maintenance, future expansions and interchangeability among units of the same MCC model, size and function.

Certified by IEC 60439-1-TTA/PTTA with coordination type 1 and 2, WEG MCCs ensure high level of operation and maintenance reliability. They are available in fixed and/or removable units, and always complying with safety requirements of personnel and electrical installations.

- Voltage class: 690/1,000 V
- Rated currents: 3,150 A (horizontal busbar) 800 A (vertical busbar)
- Short-circuit current: 50 kA; 65 kA; 80 kA
- Option for arc-resistant

# Automation Technologies

## MVW01



### Medium Voltage Frequency Inverter

- Motor voltages: 2.3 kV up to 6.9 kV
- Maximum applicable motor of 500 HP (400 kW) to 22,500 HP (2,200 kW) (16,875 kW)
- Power and control insulated by fiber optic
- Withdrawable power arms for quick and easy replacement
- Easy-to-use graphic operating interface (HMI)
- Compact model with standard 18-pulse rectifier
- Network communication: DeviceNet, Modbus, Profibus-DP and EtherNet
- Dry-type plastic film power capacitors with high reliability and long life
- Imposed voltage
- Air-cooling
- High efficiency (>99%)
- High power factor (>95%)
- Low noise level (<75 dB)
- Low heat dissipation

## SSW7000



### Medium Voltage Soft-Starter

- Supply currents: 2.3 kV, 4.16 kV or 6.9 kV
- Power: 600 HP to 7,500 HP (other values on request)
- Rated currents: 125 A, 180 A, 250 A, 300 A, 360 A, 500 A and 600 A
- Degree of protection: IP41, NEMA12
- Operating interface (HMI) with graphic LCD
- Real time clock
- Main and bypass vacuum contactors
- Medium voltage fuses
- Input switch-disconnector
- Power and control insulated by fiber optic
- Flash memory module (optional)
- SoftPLC function
- Free WLP and SuperDrive programming software
- USB connection to PC
- Motor thermal protection - Pt-100 (optional)
- 5 starting modes
- Boards for network communication: DeviceNet, Profibus-DP, EtherNet and Modbus, RS232 or RS485 interfaces (optional)

## AFW11M/AFW11W



### Modular Frequency Inverter

- Ideal solution to drive high-power motors
- Configuration through power modules (books)
- Modular structure - more compact
- Air-cooled (AFW11M) or water-cooled (AFW11W) heatsink
- Input rectifier in 6 pulses, 12 pulses or regenerative
- Supply voltage 380-690 V
- Rated currents: 340 to 2,850 A
- Power: 400 HP (315 kW) to 2,500 HP (2,000 kW)
- Same optional items and accessories of the CFW11

## CFW11



### Frequency Inverter

- Single or three-phase supply voltage of 200...690 V
- Output rated current: 2.7 to 2,850 A1)
- Maximum applicable motor of 1.5 HP (1.1 kW) to 2,500 HP (2,200 kW)
- Vectrue Technology® - linear and adjustable V/F scalar control, VVW (Voltage Vector WEG), vector sensorless (without encoder) and with encoder, vector WMagnet sensorless (without encoder) and with encoder
- Optimal Breaking® - WEG inverter breaking technology
- Optimal Flow® - for use in constant torque loads
- Smart thermal management
- Degree of protection: IP20, IP21, NEMA1 and IP55
- Built-in inductor on the DC link
- Single DC busbar
- Plug & Play Philosophy
- USB port
- Real time clock
- Built-in SoftPLC function - adds the functionalities of a PLC to the CFW11
- Operating interface (HMI) with graphic display and backlight
- Optional accessories:
  - Expansion boards of digital and analog inputs and outputs
  - Incremental Encoder Module
  - Safe Torque OFF Module (STO) for safety stop: category 3 PL and SIL CL 2 certified by TÜV Rheinland®, according to EN ISO 13849-1, IEC 61800-5-2, IEC 62061 and IEC 61508 standards
  - Communication modules: DeviceNet, EtherNet-IP, Profibus-DP, RS232, RS485, Modbus-TCP and PROFINET-IO
- RFI suppressor filter (optional, except for sizes E, F and G, which already have built-in RFI filter)
- Also available in modular versions with air-cooled heatsink (AFW11M) or water-cooled heatsink (AFW11W), complete drive (AFW11) and self-supporting (APW11), all with a wide range of rated currents and small size
- Free SuperDrive G2 Software, for inverter parameterization, command and monitoring with USB connection

*Note: 1) Models above 1,141 A/850 HP are mounted on modular complete drive panels (AFW11M / W).*

## CFW700



### Frequency Inverter

- Single or three-phase supply voltage of 200...600 V
- Rated output current of 3.6...211 A
- Maximum applicable motor of 1.5 HP (1.1 kW) to 175 HP (132 kW)
- VVW Voltage Vector WEG, vector with and without encoder (sensorless)
- Plug & Play Philosophy
- Built-in SoftPLC function - adds the functionalities of a PLC to the CFW700
- Smart thermal management
- Degree of protection IP20, IP21, NEMA1 and IP55
- Incorporated DC link inductor
- Incorporated input for incremental encoder and RS485 communication port (Modbus)
- LCD operating interface (HMI) with backlight and USB port
- RFI filter according to EN 61800-3 (optional)
- Communication: CANopen, DeviceNet and Profibus-DP (optional)
- Safe Torque OFF Module (STO) for safety stop:
  - Category 3 PL e/SIL CL 2 certified by TÜV Rheinland® according to EN ISO 13849-1, IEC 61800-5-2, IEC 62061 and IEC 61508 standards
- Flash memory module (optional)
- Free WLP and SuperDrive G2 programming softwares

# Automation Technologies

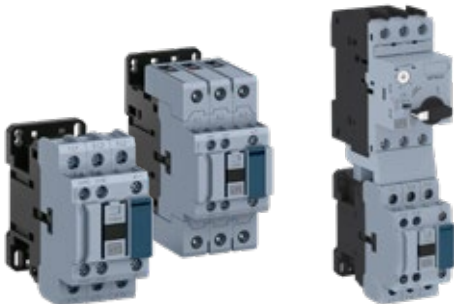
## SSW06



### Soft-Starter

- Supply voltage of 220...690 V
- Maximum applicable motor of 3 HP (2.2 kW) to 1,700 HP (1,250 kW)
- Output rated current: 10 to 1,400 A
- Incorporated bypass up to 820 A
- Allows motor inside delta connection (6 cables only for 220-575 V models) or standard connection (3 cables)
- Removable operating interface (HMI) with double display (LED/LCD)
- Kick-start function (torque pulse at starting)
- Pump control function for smart control of pumping systems
- Multimotor function
- Built-in motor protections
- Operation in environments up to 55 °C
- Torque control
- Built-in SoftPLC function - adds the functionalities of a PLC to the SSW06
- Input and output expansion module
- Modbus-RTU communication via RS232 (incorporated),
- Profibus-DP, DeviceNet, EtherNet/IP and Modbus/TCP, RS458 or USB (optional)
- Free SuperDrive G2 programming software

## CWB



### Contactors

- Compact solution up to 80 A and up to 54 mm wide
- Built-in auxiliary contacts 1NO + 1NC
- Low energy consumption DC coils allow direct drive of the contactors via PLCs, inverter outputs or soft-starters without requiring an interface relay
- More compact assemblies of motor starters
- Developed according to IEC 60947 and UL 508 international standards
- Wide range of accessories

## SRW01



### Smart Relay

- Reliability and accuracy in monitoring, operation and protection of low voltage electric motors
- Supply voltage: 24 V ac / V dc or 110/240 V ac / V dc
- Plug & Play Philosophy
- Modular design
- Communication networks: Modbus-RTU, Profibus-DP, DeviceNet or EtherNet
- USB port

Free WLP programming software (WEG Ladder Programming)

Optional Items:

- Operating interface (HMI) for cabinet door mounting: monitoring, parameterization and operation with copy function and serial communication
- Current and voltage or current measuring units
  - Current Measuring Unit (CMU): current monitoring on the three motor phases
  - Current and Voltage Measuring Unit (CVMU): current monitoring on the three motor phases, voltage monitoring up to 690 V, phase sequence, power factor and other motor powers, allowing the management of electric energy consumption in kWh

## DWB/DWA



## Molded-Case Circuit Breakers

- WEG line of circuit breakers:
  - DWB/DWA Line - protection of distribution electrical circuits and generators
  - DWB/DWM Line - motor protection
  - IWB and IWA Line - electrical circuit switch-disconnection
- Rated currents: 16 to 1,600 A
- Short-circuit breaking capacity up to 80 kA (380/415 V)
- Models with thermal and adjustable magnetic triggers
- Broad range of internal and external accessories
- Technical specifications according to IEC 60947-2
- DWB1000 and DWB1600 with LSI electronic protection

## UCWT



## Three-Phase Capacitive Units

- Ideal for localized/individual motor correction:
  - 0.5 to 20 kvar at 220 V
  - 0.5 to 35 kvar at 380/440/480 V
  - 40 to 50 kvar at 380/440/480/535 V
- Built-in discharge resistors
- Protecting cover for connections
- Philips and box terminals



# Power Generation



## Combined Flexible Products for Sustainable Energy

WEG has the expertise to provide integrated energy solutions to drive all plant equipment. The products are designed to the highest quality standards and state-of-the-art technology demanded by the Oil & Gas Industry.



WEG is a world leading company in the manufacture of power generation equipment and has the technological capability and capacity to offer the finest solutions for Oil & Gas applications. Counting on modern and fully-equipped manufacturing facilities and a team of experienced and highly qualified engineers, the company has the expertise to provide reliable products for the industry.

# Power Generation

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WEG's extensive experience in the manufacture of synchronous generators, added to modern design, production capacity and testing facilities have resulted in competitive and reliable products designed to the most respected industry standards such as API 546.

#### ST40



#### Synchronous Generators

- Ratings: up to 62,500 kVA at 1,800 RPM or up to 50,000 kVA at 1,500 RPM
- Voltage: up to 14,400 V
- Cooling: open, air or water cooled
- Brushless design with electronic voltage regulator
- Designed for safe or classified environments
- NEMA or IEC designs

#### ST20



#### Synchronous Generators

- Ratings: up to 150,000 kVA at 3,600 RPM or up to 120,000 kVA at 3,000 RPM
- Voltages: up to 14,400 V
- Cooling: open, air or water cooled
- Brushless design with electronic voltage regulator
- Designed for safe or classified environments
- NEMA or IEC designs

#### SG10



#### Synchronous Generators (for Alternators Sets)

- Ratings: up to 25,000 kVA
- Voltages: up to 14,400 V
- Degree of protection: IP21 to IP56W
- Number of poles: up to 26
- Brushless design with electronic voltage regulator
- Designed for safe or classified environments
- NEMA or IEC designs

# Power Transmission & Dist



## Excellence in Power Supply Technologies

Excellence in power supply technologies associated with the use of high quality raw material and product customization differentiate the WEG supplies of Transformers and Substations for the Oil & Gas Industry. Over 58,000 MVAs per year represents the reliable manufacturing capacity of WEG in the area of transformers, substations and high voltage power transmission and distribution equipment. This capacity is the result of a highly verticalized production process, providing flexibility and short delivery time.



### Dry-Type Transformer

The transformers insulated with epoxy are the best option to meet the demand for transformers that provide more safety, use less space and reduce installation and maintenance costs. This product line offers solutions for all kinds of environments. The vacuum encapsulation process and the quality of the resin prevent partial discharges and significantly increase the lifetime of the transformer. They are available with power from 112.5 to 20,000 kVA, in voltage classes up to 36.2 kV, with degree of protection up to IP55.



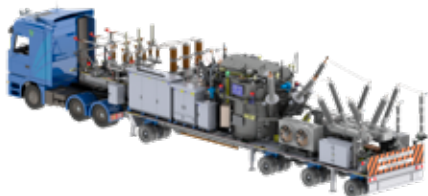
### Oil Transformers

Reduction of weight and dimensions, types of insulating oils, longer lifespan and monitoring systems are just some of the items evaluated by WEG's technical team to develop oil transformers to offer customers top level solutions. The portfolio includes a complete line of distribution and power transformers up to 550 kV, insulated with mineral oil, reducing the equipment cost, or vegetal oil, significantly reducing environmental impacts.



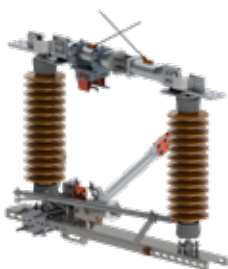
### Conventional Substations Full Turnkey Solutions

The substation department has an experienced and skilled team responsible for providing turnkey substations - from prospection, definition of a specific solution for the customer and project management and administration, to manufacture and assembly. It has proven experience, having already delivered and powered up over 430 substations in all voltage levels up to 550 kV.



### Mobile Transformers and Substations

Developed with the most advanced components in the market, the Mobile Solutions (Transformers and Substations) ensure dynamic operation and agility, being easy to be installed wherever required. They are used for emergencies and scheduled maintenances in power transformers and substations, allowing the jobs to be carried out without interrupting the power supply.

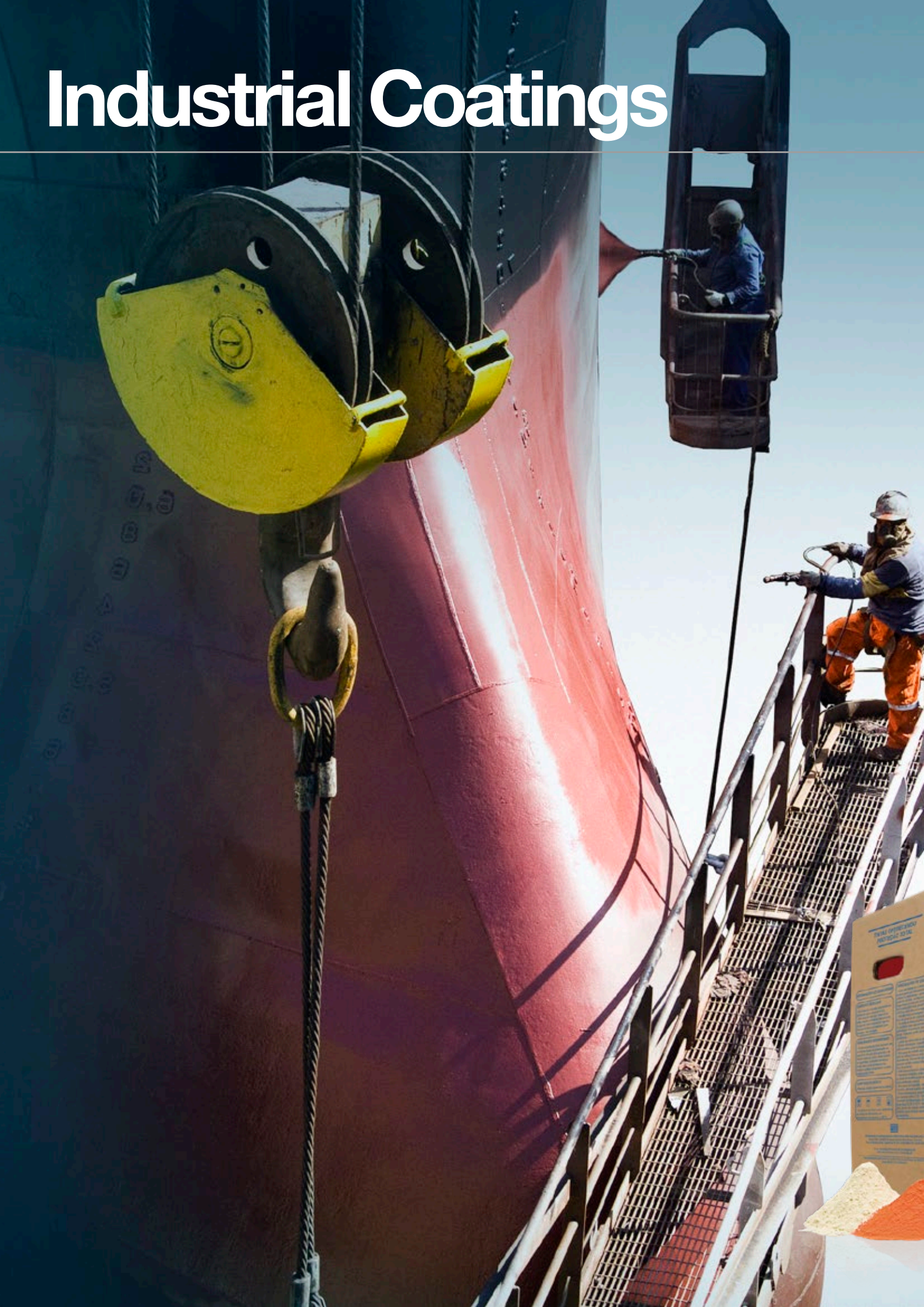


### Disconnectors

Offering more and more complete solutions, WEG also has a line of Disconnectors. Their function is to ensure the insulation of equipment, sections of lines or substations, allowing the visual confirmation that the insulated segment is de-energized. They are available in voltage levels from 15 to 550 kV, with current levels from 630 to 5,000 A and short circuit levels up to 63 kA/1s (other voltages, current and short circuit levels<sup>1)</sup> upon request).

*Note: 1) The current and short circuit levels are not applied to all equipment and all voltage levels.*

# Industrial Coatings



## Industrial Coatings Providing Full Protection

WEG has the capability of supplying a complete anticorrosive and antifouling range of products for several applications for the Oil & Gas Industry including tank farms, crude oil tankers, FPSOs and PSVs. Our line of products ranges from shop primer for temporary protection for steel plates to high performance antifouling with durability up to 5 years without maintenance shutdown operation.

Our comprehensive painting solutions include an extensive line of special products such as:

### WEGPOXI BLOCK GFD 362 – High Performance

- Primer/Topcoat polyamide epoxy of high-thickness formulated with anticorrosives pigments for steel surfaces. The product is developed for application in dry surfaces, wet surfaces, abrasive blast cleaning and on specific primer. It is particularly suitable for environments where abrasion and corrosion resistance are indispensable requirements.

**Volume solids:** 85 ±2%

**VOC:** 190 g/L

**Dry film thickness:** 250 - 500 microns dry



Immersion of 4,000 hours in salt spray without alteration.



Application in high-thickness (500 microns dry) and on hydroblasted surfaces.



Apply over hydroblasted surfaces in grade CWJ-2 according to SSPC-VIS 4 Standard.



Main application market: Oil exploration platforms and Offshore structures.



# Industrial Coatings

## WEGPOXI BLOCK GFD 462 – High Performance

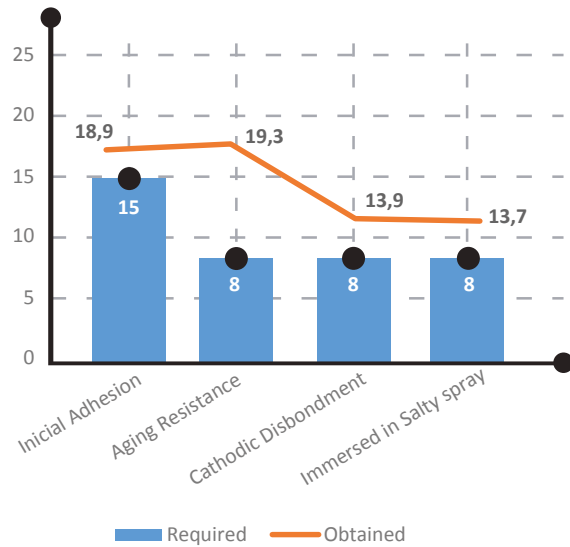
- Primer and Topcoat Epoxy Polyamide of high thickness formulated with anticorrosive pigments for steel surfaces. Product developed for application on dry, moist, hydroblasted surfaces and on specific primer. This line provides superior results to the high performance products already used in the market. The test results demonstrates that this product shows conditions of use in the same regions and uses of the high performance line, however, extending the interval between maintenance.

**Volume solids:** 85 ±2%

**VOC:** 190 g/L

**Dry film thickness:** 250 - 500 microns dry

Specification				
Test	Standard	Min	Max	Results
Touch drying (25 °C, in hours)	ASTM D1640/D1640M	-	-	2
Handle drying (25 °C, in hours)	ASTM D1640/D1640M	-	-	6
Aging resistance	ISO 20340	4,200	8 mm	6.1 mm
Cathodic disbondment	ISO 15711	4,200	20 mm	7.2 mm
Immersed in salty spray	ISO 2812-2	4,200	Ri0 0 (S0)	Ri0 0 (S0)



## W-THANE HBA 851

- Topcoat polyester of high solids by volume and glossy. The product was developed to make a system of anticorrosive protection, it has high power of waterproofing, chemical resistance and natural weathering resistance. Its performance is superior in 4 times the line of aliphatic acrylic polyurethanes, widely used in the market. Exclusive product on the market. It can be used in environments where high resistance is required. The product is certified by LEED (Leadership in Energy and Environmental Design) Certification, because of his low content of VOC (Volatile Organic Compounds).

### Test

	Standard	LACKTHANE N 2677	W-THANE HBD 851
Volume solids (%)	PETROBRAS N-1358	63	77,5
Touch drying (h)	ASTM D 1640	4h	3h

### Resistance Tests

	Standard	HBD 851
UV-A (h) Alteration of brightness <10% in 1440 hours N2677	ASTM G 154	7,000
UV-B (h)	ASTM G 154	5,500

### UV Test

UV-A	7,000 hours	
	Color variation: Delta E: 0,9	
	Loss of gloss: 8,6%	

UV-B	5,500 hours	
	Color variation: Delta E: 0,81	
	Loss of gloss: 7,9%	

## W-POXI BLOCK HPP 402

- Bicomponent Novolac Epoxy Primer, of high thickness and high solids, pigmented with aluminum. Tolerant to surfaces treated with manual or mechanical cleaning. Anticorrosive coating with high adherence on carbon steel duly treated or old paint, but adhered. Excellent chemical resistance, extremely low solvent content (LOW VOC), besides great resistance to abrasion and impact. W-POXI BLOCK HPP 402, besides providing incomparable anticorrosive protection, it also has excellent surface hardness and impermeability.

**This product presents anticorrosive results even when applied on mechanical manual treatment to the ST2 and ST3 standards, similar to those achieved when applied on abrasive blasting to the Sa 2 ½ standard and therefore it is an excellent choice for the maintenance of structures and equipment. It is a unique product in the market.**

## W-POXI BLOCK HPP 402

### Coating System Build up and Specified Dry Film Thickness

W-Poxi Block HPP 402	150 µm
W-Poxi Block HPP 402	150 µm
W-Poxi Block HPP 402	150 µm
<b>Total nominal dry film thickness (nDFT)</b>	<b>450 µm</b>

### Resistance Tests

Test method	Test duration	Pass/Fail
Reference adhesion (ISO 17025 scope number 3)	N.A.	Pass
Neutral salt spray ISO 9227 (ISO 17025 scope number 4)	1,440 hours	Pass
Condensation test ISO 6270-1 (ISO 17025 scope number 6)	720 hours	Pass
Chemical Resistance ISO 2812-1 - 10% NaOH - 10% H <sub>2</sub> SO <sub>4</sub> - Mineral spirit, 18% aromatics	168 hours	Pass

### Conclusion

The coated samples with COT sample number 02-01-18/001 meets the requirements of ISO 12944-6 C5I high.

### WEGPOXI BLOCK N 2912 TYPE I

- Two component Novolac epoxy primer of high thickness. It provides excellent chemical resistance including several solvents, good anticorrosive and abrasion resistance. It is indicated for environments where corrosion and chemical resistance are indispensable requirements.

### WEGPOXI BLOCK N 2912 TYPE II

- Bicomponent Novolac epoxy primer of high thickness and high solids. Excellent chemical resistance, low VOC, including good anticorrosive and abrasion resistance. It also has superficial hardness, waterproofing and excellent anticorrosive.

### WEGPOXI BLOCK N 2912 TYPE III

- Bicomponent Novolac epoxy primer of high thickness and high solids. The product is formulated with glass flakes that provides incomparable anticorrosive protection, has excellent superficial hardness and impermeability. The coated equipment can return to service in 48 hours at 25 °C (77 °F).

All WEGPOXI Block N 2912 lines comply the Petrobras N 2912 and N 2913 Standards.

### W-POXI DFA 301

- Polyamine epoxy coating of high thickness indicated for painting of concrete floors. It can be applied in internal and external environments. It is a high gloss product and has low VOC emission.

### W-POXI HBA 301

- Self-leveling epoxy coating that is solvent-free and low VOC indicated for indoor environments. It is a high gloss coating, applicable in high thickness in a single coat. It can compound paint schemes for floors with excellent resistance to abrasion, mechanical resistance and chemical resistance.

### W-POXI PRR 301

- Epoxy polyamine based product, bicomponent, with addition of silica. Mortar of fluid consistency, without solvents. It promotes the regularization of small defects located in floors, such as cracks (since they are stabilized), cavities, holes and places damaged by mechanical actions. Enables continuity in coating services after 3 hours.

### W-POXI VERNIZ HSS 301

- Bicomponent modified epoxy varnish without solvent. The sealing varnish offers adherence in surfaces of concrete, masonry, tiles, ceramic and wood. One of its functions also is to reduce the excessive or irregular absorption of the topcoat when applied on porous substrata. Indicated as surface adherence varnish, offering an adherence base to the specific coating system.

### W-TERM HPD 364

- Phenolic epoxy coating with excellent chemical and anticorrosive resistance which are maintained when used at high temperatures. Indicated for aggressive environments providing good anticorrosive protection on steel insulated or not.

### W-POXI ONP 415

- Epoxy primer of fast drying, it allows wet on wet applications. Excellent anticorrosion protection, flexibility and hardness. Excellent adhesion on aluminum, galvanized steel and glass fiber.

### WEGZINC 401

- The shop primer of Zinc Silicate Ethyl provides good anticorrosive protection even after heating up to 800 °C (1472°F). It does not interfere in the process of welding, cutting gas and performance. Certified by DNV and Lloyd's Register for shop primers resistant to weldability. Especially developed for protection of steel during construction and assembly of new work. Used when requiring speed in the welding process. Indicated for reducing the secondary preparation process of surfaces.

### W-ECOLOFLEX SPC 150 HyB

- Antifouling coating (copper silyl acrylate copolymer) tin-free, which ensures long and stable self-smoothing effect which makes the fresh active coating surface constantly exposed to seawater, resulting in excellent antifouling performance. This product does not contain organotin compounds acting as biocides and as such is in compliance with the International Convention on the Control of Harmful Anti-fouling Systems on ships. Product especially developed for oceangoing vessels in general.

### W-ECOLOFLEX SPC 200

- Antifouling Paint, free of hydrolytic self-polishing tin with copper acrylate copolymer base. Product especially developed for coastal vessels with high activity and medium speed. The ECOLOFLEX SPC series ensures excellent and long performance, providing great saving of fuel.

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## Services Available

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- Site repairs and troubleshooting
- Installation and start-up service
- Inspection and maintenance
- Warranty support
- Technical and commercial training (at the factory or on-site)
- Field support linked to engineering

# Global References

## Project Name

- 1 - Puesto Hernández - Luján de Cuyo Pipeline
- 2 - Ensenada Petrochemical Complex
- 3 - La Plata Refinery
- 4 - Terminal del Este
- 5 - Triunfo Second Butadiene Unit
- 6 - Refinaria Alberto Pasqualini (REFAP) Expansion
- 7 - Refinaria Pres. Getúlio Vargas (REPAR) Expansion
- 8 - Refinaria de Capuava (RECAP) Expansion
- 9 - Refinaria de Paulínia (REPLAN) Expansion
- 10 - COMPERJ Refinery and Petrochemical Complex
- 11 - Terminal de Cabiúnas (TECAB)
- 12 - Refinaria Gabriel Passos (REGAP) Expansion
- 13 - P66 FPSO (Lula Alto)
- 14 - P67 FPSO (Lula Central)
- 15 - P68 FPSO (Lula Sul)
- 16 - P69 FPSO (Lula Norte)
- 17 - P70 FPSO (Lula Extremo Sul)
- 18 - P71 FPSO (Iara Horst)
- 19 - P72 FPSO (Iara Noroeste)
- 20 - P73 FPSO (Carcará)
- 21 - P74 FPSO (Franco)
- 22 - FPSO Cidade de São Paulo (Sapinhoá)
- 23 - FPSO Cidade de Paraty (Lula Nordeste)
- 24 - FPSO Cidade de Ilhabela (Sapinhoá Norte)
- 25 - FPSO Cidade de Itaguaí (Iracema Norte)
- 26 - FPSO Cidade de Mangaratiba (Cernambi Sul)
- 27 - FPSO Cidade de Maricá (Lula Alto)
- 28 - FPSO Cidade de Saquarema (Lula Central)
- 29 - OSX-2 FPSO (Tubarão Azul)
- 30 - OSX-3 FPSO (Tubarão Martelo)
- 31 - WHP-1 (Tubarão Azul)
- 32 - P58 FPSO (Parque das Baleias)
- 33 - P61 TLWP (Papa-Terra)
- 34 - P62 FPSO (Roncador)
- 35 - P63 FPSO (Papa-Terra)
- 36 - Três Lagoas Nitrogen Fertilizer (UFN-III)
- 37 - Refinaria Landulpho Alves (RLAM) Expansion
- 38 - Refinaria do Nordeste (RNEST)
- 39 - Refinaria de Manaus (REMAN) Expansion
- 40 - Gran Chaco
- 41 - Margarita Gas Field

- 42 - Esmeraldas Refinery
- 43 - Carito Reservoir (PIGAP III) - Monagas
- 44 - Anaco and Pto Pumping Stations (RBI & RBII)
- 45 - Refinería Puerto La Cruz
- 46 - Puerto Bahia Oil Terminal
- 47 - Ethylene XXI
- 48 - Minatitlan Refinery
- 49 - West Texas Cryogenic Processing Plant
- 50 - USGC HDPE Project

- 51 - Lake Charles Chemical Complex
- 52 - Iowa Fertilizer Plant
- 53 - Lima Ammonia Revamp Project
- 54 - Utica Shale Pipeline
- 55 - Horizon Oil Sands
- 56 - Terra Nova FPSO
- 57 - Durban Refinery
- 58 - Secunda CTL
- 59 - Rabi Field



- |  |  |  |
|--|--|--|
| 60 - Benita FPSO (ASENG)                     | 79 - Sahmah Booster Station                    | 98 - Hydrogeneration Peroxide Project    |
| 61 - El Merk Central Processing Facility     | 80 - Uthmaniyah Carbon Dioxide Injection Plant | 99 - Wuhai Xilai Feng LNG                |
| 62 - Mellitah Gas Compression Station        | 81 - Juaymah Gas Plant                         | 100 - Yulin Yuanheng LNG                 |
| 63 - Skikda Refinery - Rehabilitation        | 82 - Saudi Elastomers Project - Halobutyl Unit | 101 - Jingbian Xingyuan LNG              |
| 64 - Refinaria do Porto                      | 83 - Shedgum GOSP 3                            | 102 - Enping Oilfields Joint Development |
| 65 - Refinaria de Sines                      | 84 - Wasit Project                             | 103 - Nylon 6,6 Phase 1 HMD Project      |
| 66 - Val d'Agri Oil Field                    | 85 - Al Ahmadi Refinery                        | 104 - Shuangxin LNG                      |
| 67 - Izmit Refinery                          | 86 - Shuaiba Refinery                          | 105 - Guangyuan LNG                      |
| 68 - Petrobrazil Refinery Modernisation      | 87 - New GC-16 - West Kuwait                   | 106 - Van Phong Petroleum Terminal       |
| 69 - Greater Stella Area Development         | 88 - Zubair Oil Field                          | 107 - Bintulu LNG - Train 9              |
| 70 - Jazan Refinery                          | 89 - Badra Central Processing Facilities II    | 108 - TAN Burrup                         |
| 71 - Amin Water Flood                        | 90 - Kuibyshev Azot Oxanone Plant              | 109 - Australia Pacific LNG              |
| 72 - NIMR Production Station                 | 91 - Novokujbyshevsk Refinery                  | 110 - Gladstone LNG                      |
| 73 - Karim West Water Flood                  | 92 - Nizhegorodnefteorgsintez CCR-2            | 111 - Queensland Curtis LNG              |
| 74 - GNR Water Flood                         | 93 - RSAE Neftekhim Salavat                    | 112 - Lytton Refinery                    |
| 75 - Shaybah Project                         | 94 - Permneftorgsintez Hydrogen Prod. Plant    |  |
| 76 - Saih Rawl Depletion Compression Phase 2 | 95 - Vankor Oil Field                          |  |
| 77 - Al Noor Oil Field                       | 96 - Sakhalin Project                          |  |
| 78 - Abu Tubul Gas Plant                     | 97 - Khabarovsk Refinery                       |  |

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