

## BOARD MEMBERS

**Raúl Delgado Sayán**  
President & CEO  
MSc. Civil Engineering, Civil Engineer

**Federico Fernández Santa-Gadea**  
Vice - president  
Attorney

**Raúl Delgado Eñhi**  
Executive Vice President  
MSc. Engineering and Construction  
Management  
Civil Engineer

## SENIOR MANAGERS

**Tania Castañeda Grispo**  
General Manager  
Manager of subways and Railways  
MSc. (c) Energetic, Civil Engineer

**Marco Montalvo Farfán**  
Highways Manager  
MSc. Ingeniería Civil, Civil Engineer

**Jesús Abugattas Abuid**  
Buildings, Ports and Health Manager  
MSc. Civil Engineer, Civil Engineer

**César Montero Flores**  
Electrical Energy Manager  
MSc. Electrical Engineering,  
Electrical Engineer

**Marco Vargas Medina**  
Hydraulic and Irrigations Manager  
and Sanitation  
MBA, Sanitary Engineer

**Jorge García Cochachi**  
Mining, Industry and Hydrocarbons  
Manager  
MSc. Electromechanical Project  
Management  
Mechanical Electrical Engineer

**Jimmy Canahuire Quispe**  
Environmental Manager  
MSc. Environmental Management  
and Pollution Control  
Environmental Engineer

**José Luis Cordero**  
Building, Ports and health Assistant  
Manager  
MBA, Civil Engineer

**Rodrigo Delgado Eñhi**  
Commercial Manager  
MBA, Business & Marketing

**Gonzalo Vizcardo Wiese**  
Central Administrative Financial  
Manager  
MBA, Economist

**Juan Verástegui Maldonado**  
Management System and Project  
Control Manager  
MBA, Civil Engineer

**Ricardo Gandolfo Cortés**  
Legal Manager

**Manuel Camasca Sulca**  
Human Resources Manager

**Orcides Camps Velarde**  
Accounting Manager

**Absalón Estrella Arellano**  
Information Technology and  
Communications Manager

**Rosa Ledesma Vega**  
Head of Department of Geology and  
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## BRANCHES

· Colombia · Panamá · Ecuador

# CESEL INGENIEROS



CESEL S.A. is a private Peruvian consulting firm, active in Peru and Latin America, specializing in studies, design, construction supervision and management of comprehensive projects in all areas of engineering. It was founded in 1972 and its main headquarters are a modern 7 floors, 10,000 m<sup>2</sup> building in Lima. It has a complete computer network, advanced engineering software, laboratories, topographic equipment, a fleet of vehicles, and an auditorium, with all the facilities for the development of engineering.

## PERSONNEL

Total: 517; Professionals: 340; Technicians: 77; Administrative: 100.

## SERVICES PROVIDED

Preliminary projects, planning studies, pre-feasibility and feasibility studies, basic engineering, final level designs, tender documents, detailed engineering, supervision of works and equipment assembly; project management: general control, acquisitions, construction management; manufacturing inspection, testing.

## MAIN PROJECTS

### ROADS

- IIRSA Southern Inter-Oceanic highway, Section 3 Inambari - Iñapari Southern Road Corridor, Peru - Brazil (403 km). Supervision of the detailed engineering and construction.
- Billingham Bridge - Puerto Maldonado (723 m). Supervision of construction and assembly of Peru's longest bridge.
- Route N° 9, Paraguay. Supervision of 212 km rehabilitation works.
- Lima - Huancayo highway, 257 km, altitude up to 4800 m.a.s.l. Final design and works supervision.
- Chongoyape - Cajamarca highway, 320 km. Final design.
- Lambayeque - Olmos - Dv Piura highway. Rehabilitation and maintenance design. 254 km.
- Chalhuanca - Abancay highway. 119 km works supervision.
- Amatitlán - Palín highway, 7 km. Guatemala. Works supervision.

### ELECTRICITY GENERATION

- Machupicchu hydroelectric power station. Rehabilitation study and revamping up to 140 MW, 50 m /s. Design of complementary 3 civil and electromechanical works.
- Charcani V hydroelectric power plant, 135 MW, 10 km tunnel. Design review and works supervision. Detail design of Cincel dam 39 m high and 425.000 m impoundment. 3
- San Gabán II hydropower plant, 110 MW, 7 km tunnel, 655 m gross head. Feasibility study, final and detail design.
- Topo hydroelectric power plant (Ecuador) 30 MW. Design review and construction supervision.
- Ventanilla thermal power plant, 2 gas turbines, 100 MW each. Pipeline for oil, 4 km. Works supervision.
- Ilo "Nepi" thermal power plant powered by simple cycle natural gas, 700 MW. Supervision.
- "El Faro" thermal power plant, 250 MW, dual combined cycle (gas and diesel). Marcona.

### ELECTRICAL TRANSMISSION SYSTEMS

- Central America electricity interconnection, 230 kV transmission line. 850 km tower spotting in Guatemala, Honduras and Nicaragua. Route selection, topography and right of way of 785 km in El Salvador, Nicaragua and Panama.
- Revamping and expansion of the national electrical system, program PE0018 PERU/BID. Included 220 kV and 138 kV transmission lines, substations, power operation center. Project management, design and supervision.
- Mantaro - Pachachaca - Callahuana 220 kV, 270 km transmission line and 3 substations. Design and works supervision. Altitude to 5060 m.a.s.l.
- Mantaro - Caraveli - Montavo 500 kV, 750 km. Pre-operativity study. Final and detail design of 500 kV substations.
- 17 transmission lines, 230 kV, 830 km and substations. Design supervision and construction supervision. Guatemala.

### WATER AND SEWERAGE

- Expansion and upgrading of sewerage system in Puntarenas, Costa Rica. Feasibility and final studies.
- Improvement of water and sewerage utilities in the Lima suburbs, 900.000 inhabitants. Final study and works supervision.
- Water and sewerage system of Cajamarca (135.000 inhabitants). Final study and works supervision.
- Expansion of the water and sewerage system of 10 cities in Piura, 700.000 inhabitants. Final design.
- Seven sewage treatment plants in Lima. Feasibility study.
- Taboada treatment plant to 14 m<sup>3</sup>/s of sewage study and analysis of the project.
- Huachipa drinking water treatment plant, 10 m<sup>3</sup>/s. Supervision of design, construction and equipment erection.

### ENVIRONMENTAL

- Operational procedures, measures to prevent and combat oil spills from 14 docks and moorings on the coast and the jungle. Vulnerability study.
- Seepage control of polluting liquids in Cerro Verde mine. Final design and construction supervision.
- Closing plans for tailings ponds and underground mines in Andaychagua, Yauricocha, Cerro de Pasco, Shougang, Aruntani, Volcan, etc.
- Environmental impact study and mitigation ecological program for the hydropower stations San Gabán I and II (220 MW) and the Macusani dam.
- 8th Lot oil environmental remediation in Amazon rainforest. Design and works supervision.
- Acid water treatment plants for Cobriza, Sinchao and La Granja projects. Basic and detail engineering.

## IRRIGATIONS AND DAMS

- Chavimochic irrigation project, Package A, 18,4-km long tunnels and 10 km long channels, 82m<sup>3</sup>/s. For the improvement of 17.000 ha and fitting out of 18 600 ha of new lands; 223 m x 67 m desander. Investment: 160 million dollars. Design and works supervision. Feasibility and design of water intakes 90 m<sup>3</sup>/s.
- Palo Redondo dam, 370 m long and 106 m high. Supervision of the feasibility study.
- Macusani dam, 65 m high, impoundment of 110 hm<sup>3</sup>. Feasibility study and final design.
- Hydric strengthening of the Mantaro river. 5 reservoirs, 330 hm<sup>3</sup>. Feasibility study.

## MINING AND HEAVY INDUSTRY

- PLS and raffinate drive lines (1500 m<sup>3</sup>/h), Toquepala Mine - Southern Perú Copper Corp. Basic engineering and detailed engineering.
- Cerro Verde copper-molybdenum concentrator plant, 15,000 t/day of sulfides. Feasibility optimization.
- Expansion of Arcata concentrator plant to 1,750 t/day. Final engineering.
- Expansion of Toquepala plant to 120,000 t/day. Feasibility study, basic and detailed engineering. Engineering for installation of 6 tailings thickeners.
- Racayococha concentrator plant 66,000 t/day. Conceptual and basic engineering of concentrator plant, tailings deposit and slurry pipeline.
- Process and water treatment plants of Laguna Norte and Pierina Mines. COA of civil and electromechanical works.
- Pacasmayo cement factory in Piura. Engineering, procurement and supervision of works.
- Cerro Lindo, El Porvenir and Atacocha Mining Units. Process improvement engineering.

## PORTS AND AIRPORTS

- Puertos fluviales de Iquitos, Pucallpa and Yurimaguas. Diseño y supervisión de obra.
- Puerto del Callao. Ampliación y modernización. Revisión del plan maestro, elaboración de la ingeniería básica e ingeniería de detalle de la primera etapa de ampliación del principal puerto marítimo del Perú.
- Puerto del Callao. Nuevo terminal de contenedores en la zona sur. Revisión del expediente técnico y supervisión de la ejecución de obras y equipamiento. Callao, Lima; Perú.
- Nueva Ciudad Aeropuerto Jorge Chávez. Supervisión de la ejecución de obras del nuevo terminal de pasajeros, segunda pista de aterrizaje (3500 m), nueva torre de control y obras complementarias. Callao, Lima; Perú.
- Aeropuertos de Trujillo, Talara, Tumbes, Chachapoyas y Anta. Evaluación estructural y funcional de los pavimentos.

## HEALTH

- Huancayo Regional hospital. Project management and works supervision (500 bed- capacity).
- Diagnostic of the maintenance systems of Health Ministry. Study of 9 hospitals, 13 health centers and 23 health points.
- Hemodialysis Center, 50-unit capacity, IPSS Hospital / Lima. Final design.
- Belen hospital in Trujillo, 400-bed capacity. New design and remodeling works supervision.
- Alberto Sabogal hospital. 157 beds, 9300 m . Review design, works supervision.
- High complex hospital of La Libertad, 240 beds, 34 000 m . Constructed rea. Work upervision a s.

## METRO

- Metro network of Lima and Callao. Medium-term and long-term Network strategic plan. Preliminary project of the five lines of all the Metro networks, 137 km length, 115 stations.
- Line 1 of the Metro of Lima and Callao, section 1: Villa El Salvador - Av. Grau 21.5 km and section 2: Av. Grau - San Juan de Lurigancho 12.4 km. Design, work and assembly supervision.
- Line 2 and 4 of the Metro of Lima and Callao (underground); Line 2: Ate - Callao 27.3 km and line 4, section 1: Av. Faucett - Av. Gambetta 7.8 km. Design, work and assembly supervision.

## BUILDINGS AND URBAN DEVELOPMENT

- New Western South American headquarters - Aspersud. 6000 m . Project management.
- Morococha's new city. 1050 houses, communal centers, etc. Integral project management for construction.
- National Stadium of Lima. Supervision of the integral rehabilitation.
- Grand National Theater. Construction and equipment supervision.
- Shopping Centers and Supermarkets. Project Management, 115.000 m . (Open Plaza, Saga Falabella, Plaza Vega, 2 Sodimac, Tottus).

## HYDROCARBONS AND PETROCHEMICAL

- La Pampilla oil refinery. Design of the expansion of the pumping system and interconnection pipelines for residuals. Installation supervision of a 2,8 km long pipeline for oil.
- Talara oil refinery. Review, designs and works supervision of the liquid cargo dock. Group of 28-km pipelines for oil, pumping stations and tanks.
- Biodiesel Refinery. Ventanilla, Lima. Production: 180.000 gallons/day. Storage tanks of 150.000 m. Project management.