

PROFESSIONAL C. V.

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Nationality Italiana
Birth date 11/08/1979
Education MECHANICAL ENGINEER– ALBO DEGLI INGEGNERI PROVINCIA DI MACERATA – N. 1139
Familiar status MARRIED

• Date (–) SEPTEMBER 2020 - TODAY
Company FOUNDER AND CHAIRMAN OF MEKS CONSULT S.R.L.
CONSULTING COMPANY ACTIVE IN RENEWABLE ENERGY PLANTS, INDUSTRIAL INNOVATION (R&D PROJECT COORDINATOR, SYSTEM ENGINEERING), SPECIAL MECHANICAL AND HYDRAULIC SYSTEMS.
MAIN WORKS:
R&D PROJECT MANAGEMENT (ENERGY TRANSITION APPLIED TO INDUSTRIAL PRODUCTS – MINING FIELDS);
OPERATION MANAGER OF A 400 KW HPP. HYDRO POWER PLANTS PRODUCTION ANALYSES AND ELECTROMECHANICAL CONSULTANT FOR N. 3 POWER HOUSES WITH ARCHIMEDEAN SCREWS.
HYDRAULICALLY OPERATED TRASH RACK CLEANING MACHINES AND LOG GRAPPLER FOR HIGH DEPTH INTAKE: DESIGN, PROCUREMENT MANAGEMENT, COMMISSIONING SUPERVISOR (VIRBHADRA BARRAGE AND ASAN BARRAGE, UTTARAKHAND – INDIA).
QUALIFICATION AS LEAD AUDITOR FOR CARBON FOOTPRINT PRODUCT ASSESSMENT – ISO 14067 (BUREAU VERITAS)

• Date (–) JANUARY 2014 –OCTOBER 2021
Company ERGONBLUENERGY S.R.L.. – TREIA (MC-ITALY)
Role TECHNICAL DIRECTOR AND PROJECT MANAGER
Field DEVELOPMENT AND EPC CONTRACTING FOR HYDRO POWER PLANT
Description As technical director of the Company, his activity was mainly focused on:

- general HPP lay-out definition and sizing
- Mechanical detail design supervision and approval for Gates, Penstock, TRCM, Turbines
- Hydrological data validation and HPP energy production assessment
- System engineering coordination for small-medium size Hpp
- Construction strategy assessment

Main Recent Contract Carried out:

- HPP Chiomonte ((14,9 MW - TO-ITALY): Hydromechanical revamping. Gate set refurbishment or substitutions
- Design, construction management and commissioning of a Pipe self-supporting Bridge for river crossing – Pipe size 1800 mm - WT 16 mm
- Penstock substitution of 140 m of high slope sections for Dora Riparia crossing - Pipe size 1800 mm - WT 8 mm

Welding qualification procedure management for site welding, NDT management

- HPP Palistro (SA – ITALY) 1,25 MW– 300 m net head – Horizontal Pelton turbine, Customer: Consorzio di Bonifica Velia – 700 m Penstock design and construction – Nominal Size 600 mm
- Castellarano, 2 MW, Customer Iren Energia and Consorzio Bonifica Emilia Centrale. Kaplan turbines designed by Ergonbluenergy; design procurement and installation management of the full hydro and electromechanical Balance of Plant, Steel bifurcation 3600/2900/2000mm design, construction, testing and installation management.
- Popoli3° Salto, Francis Turbine, 550 kW: turbine design, construction and installation management; 1,5 km long 1300 pipe size penstock inspection and repair
- Susa HPP (12,5 MW): Penstock Safety device substitution in a remote site – Pipe Diameter 1500 mm, wt 10 mm (included butterfly valve, hydromechanical speed control system configuration
- Pergola HPP, 410 kW, Vertical Kaplan full spiral by Ergonbluenergy – design, construction and installation of full electromechanical works
- Basic design of Tindinyo HPP (Kenya) – 2.4 MW with n. 2 Vertical 10,5 cubic meter / s kaplan

Recent research activities: April 2016- October 2017 - Project coordinator for the research program of Ergonbluenergy, financed by Italian M.I.S.E (Economical Development Ministry) on Mini-hydro generation systems for sustainable grid development by extensive use of remotely controlled micro-power plants.

As Project Manager and Technical Director of some of the main works carried out by the Company, he has been responsible for contract execution, time schedule and budget respect with reference to each specific scope of work.

The main gate systems designed and built in recent period are:

- N. 3 new maneuvering system for Safety gates 6,1m (W) x 6,7m (H), 18,6 m design head, Vardnili DAM, Abkatia, Georgia, Customer Feljas & Masson
- N. 3 Turbine Safety gates, 5,5 m(W) x 6,1 m (H), 12 m design head
- Revamping of all the hydromechanical equipment of HPPs Chiomonte (14,9 MW) and Susa (12,5 MW), customer IREN (intake radial gates, safety valves, pipe-bridge, several sliding gates, safety wheel gates, new bulkhead systems, new TRSM and Trash Rack)
- New penstock and Hydromechanical equipment of San Sebastiano Hydro Power House, Fedrigoni Group, 1,3 MW – 1300 ND steel pipe – NP 6 bar.

He supervised the concept, design and construction of the Hydromechanical and Electromechanical equipment (including turbines) of the following HPP built in recent period, precisely among all:

- Chiaravalle: n. 2 vertical Kaplan by Ergonbluenergy, 450 kW.

Among the others, the following plant have been successfully commissioned:

- Castibellino HPP (Vertical Kaplan - 12 cm/s, 5m head 500 Kw)

- Alzano Lombardo (Screw type turbine – 4 mc/s, 2,9 net head, 110 kW)

- Contessa (95 kW – S-Type Kaplan)

- Pianarucci HPP (Revamping with partial reconstruction): 28 m net head, 11 cm/s, 3,6 MVA rated power installation management of 2400 mm Penstock PRFW / Steel construction

- Gorgolungo HPP, 22 m gross head, 1,2 cm/s flow, 192 KW installed power, 800 m penstock

- Monteroberto HPP: 4,4 gross head, 12 cm/s flow, 415 KW installed power, 65 m channel

- Sentino HPP: 5,65 gross head, 4 cm/s, 210 KW installed power,

Low head Kaplan turbine design and construction: 9 head kaplan turbines up to 12 cubic meter per second flow have been designed and installed. Procurement and construction management are the key skill for extreme compression of delivery time.

- design supervision of trash rack cleaning machine model “galileo-roma”, design development installed in HPP –Fiano Romano – telescopic hydraulic arm, depth 13,9m, hydraulic rake width: 2,75 m, trash rake width 18 m, trash rack and turbine security gates (5,5 width x 6,5 hight)

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| • Date (–) | January 2011 – January 2014 |
| Company | Cesari Hydro S.p.A. – Matelica (MC-ITALY) |
| Role | Technical Director and Project Manager |
| Field | Hydraulic gates, special trash rack cleaning machines, hydraulic penstock |
| Description | <p>As Project Manager and technical director of the company he has led concept design, detail mechanical, hydraulic and automation design, procurement optimization, construction and assembling in factory and at yard of, among others, the following equipments:</p> <ul style="list-style-type: none">- HPP Rventazon, Costarica, n. 2 Trash Rack cleaning machines, up to 35 m depth, rope type with oil free bucket. One of them is 360° rotary polyp crane equipped. Special systems for debris collection and disposal have been studied- n. 5 (five) fully automatic, crane equipped trash racking cleaning machines, with ropes (depth up to 23 m), included conveyor belt system and other special waste disposal equipment, HPP of Madunice, Kostolna, Povaska Bystrica, Trencin and horna Streda HPP –Customer Slovenske Elektranre (SK).- Ecological Flow discharge penstock, dissipation and regulation system and full refurbishment of all the gates for dam management: Ghirlo DAM, Customer: Enel Production S.P.A.- antivibrational design of trash rack, 60 m wide x 4,5 m depth, CIMENA intake. Customer Enel Green Power- HPP Isola Dovarese (Italy): zero-environmental impact flap gates system, diversion wire regulation (4 x 15 m wide, 1 m hight); two security gates for VLH turbines (7,6 m wide, 5 m high); customer STE Energy- Cannucciaro: Revamping of 1 MW HPP, including design of steel penstock branch 2500 mm – 12 mm wt- Revamping of safety gate od piezometric well, 2,6 wide x 2,6 high, 80 m design head and well depth): revamping and reverse engineering, Cotilia Power house, Customer E.On. Production.- Revamping and the security bulk head of Turano Lake and Salto Lake; 3,6m (W) x 3,6 (H), evamping of several special trask rack cleaning machines for E.On. Production, Terni Hydroelectrical department.- Wagon type Kaplan security gate, c/w wheel, 2,1 x 2,1 net size, 38 m design head; with penstock/gate transition/reduction steelworks; Customer: Eredi Paci- Kaplan turbine statoric and distributor part and dismounting fitting (2100 size); construction |

and assembly management. HPP: Pianarucci (Tolentino, MC)

- Trash Rack cleaning machine model "Colibri", design development and installation in HPP Chiaravalle (AN) – telescopic hydraulic arm, depth 3,9 m, rake width: 2 m, trash rake width 12 m

• Date (–) September 2008 - December 2010
Role Free lance mechanical engineer (since April 2009 funding partner of Ergon Servizi s.r.l.)
Field Consulting and design in renewable Energy field and Energy Management
Description **mini-HHP (<200 kW):** Energy and Idraulic Analysis, architectural and urbanistic analysis, work direction supporting, technical components selection and procurement management. E.g:
1) Loc. Angeli di Rosora – Customer. Tecnoelettrica Alternativa srl. – 120 kVA
2) Loc. Albacina - Fabriano (AN) – Customer: Albacina srl – 99 kW
3) Loc. Serre Basse Matelica (MC) – Customer : Esino e Musone Idroelettrica srl; Work amount: €620'000
4) Loc. Ponte Maglio - Santa Vittoria in Matenano – Customer: Rastelli Gino e Figli snc;
Completion and coordination of all technical and administration documents, "IAFR qualification for GSE (IT)" and "Ritiro Dedicato" of Energy produced from renewable sources; Fiscal management of small electrical farm (IT tax regulation).
E.I.A. including Acoustical Impact for a number of renewable Energy production plants. e.g.: PV plant of "Santa Maria 2" – Comune di Filottrano, 2.496 MW – Customer "Rinnovabili delle Marche s.r.l."; HPP near Jesi (AN), Customer "Gorgolungo s.r.l."; PV plant of "Collevago" – Comune di Treia, 3.3+0.9 MW – Customer "Rinnovabili Maceratesi s.r.l."
Preliminary and detailed design of PV land based plants and on roof of middle size (>200 kW)
Feasibility studied and business plan related to PV Plants for private factories, Italian public entities.

Novembre 2008 – **Wind Farm preliminary design (20 MW);** Customer: Municipality of Urbania and Piobbico; Work amount: € 18'000'000

Design of Hydro-thermal plants in 18 loft building, designed to be energetically self-standing thanks to integration of low enthalpy geothermics, PV, Thermal solar panels;

Energetic qualification and certification, Analysis and selection of materials for thermal and acoustic insulation for residential application and industrial application - Software HVAC MC4;

Consulting activity for Energy saving tax reduction procedures: Technical and Administrative completion.

Feasibility study for straw co-generative power plant (1 MW - Comune di Pergola-PU); Estimated CEPEX: 2,5 M€

System development and integration for small wind turbines, including wind analysis, power conditioning, monitoring and regulation – Comune di Sassoferrato;

September 2009 – **Foreseen acoustic evaluation** for Mini-wind turbines.

Several feasibility studies for micro-wind plants (10 – 30 kW);

Energy Audit and Energy Diagnosis Small and middle/big manufacturing enterprises, with preliminary technical solution for energy rational consumption and power need optimization; Scouting and driving of EU fund contributions process.

Educational course teaching: PV plant design organized by I.S.P. Ravenna

TEE – Italian energy efficiency bond - (AEEG e GME) – documentation and successful inquiry

Basic thermography experiences

• Date (da – a) March 2009 - March 2010

Role Municipality of Bologna – technical office chief

Sole responsible for total work amount of € 600'000 e ordinary office management

Among them, snow-fall protection system project leading

• Date (da – a) October 2006 - Settembre 2008

Company name Saipem Energy International S.p.A. (Saipem Energy Services S.p.A. dal 2008), a society of Gruppo Saipem (controllata ENI) – Via Toniolo 1 – Fano

• Kind of company Offshore and Subsea structures and plants for oil & gas

• Kind of job Subsea Mechanical Engineer

Main responsibility and required skills Functional and structural design of subsea installed Pipeline and Pipeline-End Manifold of any type, on deep and shallow sea-water: feasibility studies, basic and detailed design of (e.g.):

-Foundation base for SSIV for re-gassifier, OLT Project – Customer OLT; Thekah Project – Customer: Rosetti Marino)

- Detailed design of Pipeline End Manifold of Thekah Project – (Customer Rosetti Marino) Preparation of Procurement, fabrication and installation procedures of special Items (subsea valves, forged pieces, flexible pipes)
- Cost estimate and Project scheduling (Goliat Subsea Installation Study – Customer Eni Norge)
- Conceptual study for repair and subsea tie-in systems of 48” – 1200 km sub-sea pipeline (Nord Stream Project – PeterGaz)
- Technical Documentation and DWGs for Bid did by SAIPEM for “Lump sum turn key” projects of EPIC type (Bid per AB15 Gas Gathering – Customer Exxon Mobil;)
- Detailed Design of PipeLineEnd Termination - EPIC Contract (Sequoia Project – Burullus Gas)

EDUCATION

- Date (da – a) February 2008
- **Qualification** **Ph.D. in Materials, Soils and Water Engineering** - Department of “Ingegneria e Fisica dei Materiali e del Territorio” – Università Politecnica delle Marche – Ancona (IT)
PhD, written in English, on “Piezo-optical characterization of uniaxial crystals by means of Laser based photoelasticity – Application to PWO scintillators”. - Photoelasticity, Programming Labview (IMAQ) for Image analysis, tensorial calculation, cristal anisotropies, X – Ray diffractometry Grazing Incidence Diffractometry. Collaboration in teaching in the course “Analitical technicques of enviromental physics”
- Principali materie / abilità professionali oggetto dello studio
- Date (da – a) 9 Novembre 2004 - Politechnical Univerity of Marche (Ancona – IT)
- **Qualification** **Degree in Mechanical Engineering –(5 year course) - 110/110 cum laude**
Final work on “Tecniche fotoelastiche per il controllo di qualità di cristalli scintillatori mediante mappatura di tensioni residue” – in collaboration with CERN of Geneve for the CMS Experiments in LHC (Large Hadron Collider)
- professional subject studied
- Date (–) Ottobre 2005 – April 2006
- **Qualification** **Environmental Acoustic patented technician – (according to Italian law L.447/95 - DDPF – 69/TRA_08 del 25/03/2009)**
- Date (da – a) February 2005
- **Qualification** **State qualification for Engineers – Engineer Register Insertion - Provincia di Macerata (IT) - Sezione A – n° 1139**

SCIENTIFIC PUBLICATIONS

- 1) PWO photo-elastic parameter calibration with laser-based polariscope; A. Ciriaco, F. Davi, M. Lebeau, G. Majni, N. Paone, P. Pietroni, D. Rinaldi; Nuclear Instruments and Methods in Physics Research A 570 (2007) 55–60
- 2) Quality Monitoring of PWO production during an R&D phase, M. Lebeau, A. Ciriaco, L. Gobbi, G. Majni, N.Paone, P.Pietroni, D. Rinaldi; Proceedings of the 8th International Conference on Inorganic Scintillators and their Use in Scientific and Industrial Applications
- 3) Light collection dependence on polishing method; M. Lebeau, C.Armataffet, A.Ciriaco, A.Di Cristoforo, P.Mengucci, R.Paramatti, D.Rinaldi; Accepted for publication in Nuclear Instruments and Methods in Physics Research.

Macerata, February 2022

