In ECISGROUP we believe in our continuous improvement of performance and in customer satisfaction. Our vision is to become the market leader by providing engineered turnkey systems to the Oil&Gas market, offering performance, productivity and efficiency. Our facilities in Milan, at the heart of the Italian industrial region, are equipped with “state-of-the-art” equipment for the complete design, fabrication and in-house testing.

- 1980 CHEMiT
- 1990 ECIS
- 1999 E&C

In 2007, after several years of cooperation between CHEMiT, ECIS and E&C that shared a common business experience at international level, the Management decided to accept a new challenge for the developing market: incorporate all three companies in a new holding, under the name ECISGROUP.

In 2008 another goal was achieved: ECISGROUP moved to new premises and changed its legally status to ECISGROUP S.p.A., presenting a new image on the Italian and international markets.
MORE THAN 600,000 MAN HOURS SUPPLIED
- Over 125,000 Man - Hours/Year
- 4 million Euro turnover/Year

Engineering development started with automation and instrumentation departments...

...since the early 2000's the Engineering Division has expanded with Process, Electrical, Piping and Civil Engineering Departments.

- Field instrumentation & valve specification
- Junction box and cable routing design
- Analyser and shatter engineering
- Hydraulic controls
- System architecture selection
- Control logics, database
- Multivariable Control and optimisation
- One line diagrams, datasheets
- Load flow, short circuit, protection coordination
- Earthing and lighting details
- Telephone, PA/GA, mobile radio systems
- Radio Links, fiber optics
- CCTV, intrusion detection

- Foundations and bases
- Roads and buildings
- Metal / Steel structures
- General Arrangement & plot plans
- Equipment layout
- Isometric Drawings
- Feasibility/Debottlenecking
- Due Diligence studies
- HAZOP
- Safety

- EPC contracts interfacing
- Clients' contractor(s) management
- Supervision of FAT & commissioning

- Automation & Advanced Process Control
- Instrumentation & Analysis

- Process
- Mechanical & Piping
- Civil
- Electrical
- Telecommunications

- OIL & GAS ENERGY
- PETROCHEMICAL BUSINESS AREA
For over 20 years, ECISGROUP Engineering Division has provided Customers with qualified engineering services and has powered the development of advanced technology solutions in Control & Safety Systems, Instrumentation, Process Simulation, Multivariable Control and Optimization Technologies for plant management.

Along with the group’s increasing needs, ECISGROUP Engineering Division with the implementation of Electrical, Process and Piping engineering departments, has grown to become a full Multidisciplinary Engineering Business Unit with over 125,000 Man Hours/Year Multidisciplinary Engineering Staff

- Project Management Consulting – PMC
- Process
- Mechanical & Piping
- Civil
- Instrumentation & Analysis
- Advanced Control
- Electrical
- Telecommunications

Activities description:

ECISGROUP’s project manager is based in Client/Client’s Contractor as Client Representative, responsible for monitoring and controlling duties as following:

• Development/review/approval of project procedures, methods, etc.
• Review/approval of Contractor engineering documents
• Review/approval and HAZOP of subcontractor/vendor engineering documents
• Engineering, interface requirements among different EPC contracts
• Coordination with Contractors for clear understanding of project requirements
• Coordination with procurement group for purchase of relevant equipment and materials
• SIL assessment
• Technical Bid evaluation
• FAT and Supervision of Commissioning

Significant References:

• Foster Wheeler Italy / Azzawya Refinery Re-instrumentation - Libya (in progress)
  - ITALY c/o ABB Milan (50 man-month)
  - Libya Azzawya (60 man-month)
• Technip-Coflexip / Agip Gas BV – Western Libya Gas Project WAFA
  - ITALY/KOREA/JAPAN/LIBYA/LIBYA OFF-SHORE LYBYA
  (185 man-month)
• AgipKCO Project c/o Tecnomare Italia Milan (34 man-month)
MECHANICAL AND PIPING ENGINEERING [13%]

Activities description:
• General arrangement study
• Equipment layout with planes and sections
• P&I
• Line list
• General plot plans
• Key plans
• Layout in the plant area
• Layout outside the plant area
• Isometric drawings
• Pipe and/or fittings of particular making, with material list
• Stress analysis
• Auxiliary piping support design, support list, material support list
• Steam trap specifications and relevant material list
• Nozzle orientation and elevation
• Ladders and walkways construction design and relevant material list
• General plan specifications for equipment (compressor, pump, turbine, skip hoist, wagon, bridge etc.)
• Equipment list

Significant references:
• Activity of basic engineering development relevant to civil/piping disciplines, Synkal Factory, Porto Torres - year 2005

Tools of development for Mechanical and Piping Engineering:
• microstation
• autocad
• pds

PROCESS ENGINEERING [14%]

Activities description:
• Feasibility study (i.e. process debottlenecking, yield improvement, energy savings, etc.)
• Development of Process Design Packages (PDP) and Front End Design Engineering
• Process simulations
• Development of Material and Energy Balances, Process Flow Sheets, P&IDs
• Process Equipment Sizing, Preparation of Equipment Data Sheets, Item Lists, Duty/Supply specifications
• Process Control and Emergency Shut Down philosophies
• Selection and Development of Advanced and Complex Controls, Multivariable Process Controls, process optimization applications
• Auxillary engineering systems, utilities, blowdown networks, fuel, offsites
• Plant Operating Manuals Development relative to Licensor’s Operating Guidelines
• End User Field support (Operators’ Training, Troubleshooting)

Significant references:
• TECNIMONT - Tancos Namekmak Refinery (TATARSTAN) process assistance HAZOP and SIL sessions for the whole complex
• Saipem Energy Services – PLANT / SATAN ISOGA NO centre upgrading INDEMINA Front End Engineering Design, HAZOP, Processes equipment/piping sizing and data sheets, HAZOP follow up
• Saipem Energy Services – Sambursky Artic Gas Project – Functional and detailed engineering for blow down and flare units, assistance to Hazaq relative to process and auxiliary systems and utilities
• Furnace – Tamwil Refinery, Charamin. Process & thermal design for the integration of new vacuum distillation unit heat exchangers into an existing atmosphere distillation unit crude preheat train

Tools of development for Process Engineering
• Simulation: Hysis, PRD 1
• Heat Transfer Equipment sizing: TASC, HTRI
• Specialized Calculation Spreadsheets for systems / equipment sizing

Activities description:
• General arrangement study
• Equipment layout with planes and sections
• P&I
• Line list
• General plot plans
• Key plans
• Layout in the plant area
• Layout outside the plant area
• Isometric drawings
• Pipe and/or fittings of particular making, with material list
• Stress analysis
• Auxiliary piping support design, support list, material support list
• Steam trap specifications and relevant material list
• Nozzle orientation and elevation
• Ladders and walkways construction design and relevant material list
• General plan specifications for equipment (compressor, pump, turbine, skip hoist, wagon, bridge etc.)
• Equipment list

Significant references:
• Activity of basic engineering development relevant to civil/piping disciplines, Synkal Factory, Porto Torres - year 2005

Tools of development for Mechanical and Piping Engineering:
• microstation
• autocad
• pds

CIVIL ENGINEERING

Activities description:
- Plot drawing and related design using Customer’s standard where necessary
- Foundations (piling, excavation etc.) plot drawing and detailed design using Customer’s standard where necessary
- General plot plan of foundation
- Detailed plot plan foundation
- One line diagram of building and metallic structure pipe rails, framework devices, etc.
- Office of detailed drawing for reinforcement and steel stress [columns, walls, platforms, etc.] where not contemplated by Customer’s standard
- Basic design for reinforced concrete work with static and dynamic stress
- Construction drawing for reinforced concrete work
- Approaches building project sections, sections, front elevation etc. with approximate metric computation for contracts
- Executive design and construction plan of all reinforced concrete and other buildings
- Executive design of reinforced concrete foundation plinth, single-line diagram of steel building and executive plan for civil work for completion of steel buildings
- Executive plan of visual and special painting, anti-slip covering with technical specification
- Executive design for heating and air-conditioning plants, sanitary facilities, electrical installations, false ceiling etc. for the complete realization of work
- Material purchase note for civil work, not covered by Customer’s price list with possible specifications
- Preliminary metric computation execution for contract purposes and final for each civil works of the plan covered by Customer’s price list
- Preliminary and final material list with relevant estimate in compliance with Customer’s price list
- Static control (not geometric) and possible calculation check of the documents

Civil activities
- AutoCAD
- Microstation
- Primas

Instrumentation & Analysis Engineering [24%]

Instrumentation:
- Project instrumentation general standards including plant packages
- P&ID’s detailed formation by means of ISA-WG6/ISA standard symbols or Client standard
- Instrumentation specification development based on process data
- Material Requisition / Supply Specification / Purchase Order preparation
- Vendor technical alignment, economical alignment and purchase if required
- Instrumentation vendors follow-up: documentation check/comment/approval, instrumentation test

Instrumentation field installation and mounting:
- Electrical/instrumentation interconnection signals table
- Overall instrumentation electrical power supply engineering
- Marshalling & Control cabinets design
- Interconnection design, safety (grounding design for control cabinets and instrumentation devices)
- Typical drawings for electrical installation, process installation, pneumatic installation
- Field / Control room electrical connection schemes
- Single wire loop diagrams and Two-wire loop diagrams
- Cable and Multicore cable list. Cable coils schedule
- Instrument and Junction Box positioning layout
- Instrument air distribution layout

Analysis:
- Analyser House dimensional study drawings with analyzers, power interlock, HVAC cabinets, Material Requisition, Bill evaluation
- Gas Chromatographs and process analyses data sheet
- Primary and secondary sampling system with feed loops design and drawing for gas chromatograph and continuous analyzers

Significant references:
- Shangruiji/Amoco Gulf Sep-1 Crude Facilities (S. Arabia) Detailed Instrumentation Engineering
- Tecnimont - Borealis F46 Schwechat - Detailed Instrumentation Engineering and Complete Plant analysis system development, Vendor follow-up and assistance to FAT (16,000 man-hour)
- Tecnimont / Borouge 2 - Complete Plant analysis system engineering, Vendor follow-up and assistance to FAT in Korea for AROMATICS Plant (5500 man-hour)

Tools of development for Instrumentation & Analysis Engineering:
- InTools, Excel, AutoCAD, Microstation

Civil Engineering:
- Road plot plan and detailed design using Customer’s standard where necessary
- Foundations (piling, excavation etc.) plot drawing and detailed design using Customer’s standard where necessary
- General plot plan of foundation
- Detailed plot plan foundation
- One line diagram of building and metallic structure pipe rails, framework devices, etc.
- Office of detailed drawing for reinforcement and steel stress [columns, walls, platforms, etc.] where not contemplated by Customer’s standard
- Basic design for reinforced concrete work with static and dynamic stress
- Construction drawing for reinforced concrete work
- Approaches building project sections, sections, front elevation etc. with approximate metric computation for contracts
- Executive design and construction plan of all reinforced concrete and other buildings
- Executive design of reinforced concrete foundation plinth, single-line diagram of steel building and executive plan for civil work for completion of steel buildings
- Executive plan of visual and special painting, anti-slip covering with technical specification
- Executive design for heating and air-conditioning plants, sanitary facilities, electrical installations, false ceiling etc. for the complete realization of work
- Material purchase note for civil work, not covered by Customer’s price list with possible specifications
- Preliminary metric computation execution for contract purposes and final for each civil works of the plan covered by Customer’s price list
- Preliminary and final material list with relevant estimate in compliance with Customer’s price list
- Static control (not geometric) and possible calculation check of the documents

Civil activities
- AutoCAD
- Microstation
- Primas

Analysis:
- Analyser House dimensional study drawings with analyzers, power interlock, HVAC cabinets, Material Requisition, Bill evaluation
- Gas Chromatographs and process analyses data sheet
- Primary and secondary sampling system with feed loops design and drawing for gas chromatograph and continuous analyzers

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- Tecnimont / Borouge 2 - Complete Plant analysis system engineering, Vendor follow-up and assistance to FAT in Korea for AROMATICS Plant (5500 man-hour)

Tools of development for Civil engineering:
- AutoCAD
- Microstation
- Sap 2000
- Primas

Analysis:
- Analyser House dimensional study drawings with analyzers, power interlock, HVAC cabinets, Material Requisition, Bill evaluation
- Gas Chromatographs and process analyses data sheet
- Primary and secondary sampling system with feed loops design and drawing for gas chromatograph and continuous analyzers

Significant references:
- Shangruiji/Amoco Gulf Sep-1 Crude Facilities (S. Arabia) Detailed Instrumentation Engineering
- Tecnimont - Borealis F46 Schwechat - Detailed Instrumentation Engineering and Complete Plant analysis system development, Vendor follow-up and assistance to FAT (16,000 man-hour)
- Tecnimont / Borouge 2 - Complete Plant analysis system engineering, Vendor follow-up and assistance to FAT in Korea for AROMATICS Plant (5500 man-hour)

Tools of development for Civil engineering:
- AutoCAD
- Microstation
- Sap 2000
- Primas
**AUTOMATION & ADVANCED PROCESS CONTROL [17%]**

**Description of Activities:**
- Development of General Design Specification for plant automation systems: DCS (conventional architecture, Profibus, Fieldbus), ESD/Protection systems, process equipment monitoring systems (XMV, BMS), local control stations/panels.
- Control and ESD systems technical evaluation and specification for oil-refinery.
- Technical evaluation and alignment Vendor quotations. Interfacing with Vendors.
- Automation Design activities:
  - ESD protection systems for plant and equipment/machine
  - ESD narratives
  - Cause and Effect matrix development
  - ESD logic diagrams
  - ESD integration with protection and monitoring sub-systems (e.g. XMV, BMS)
  - ESD systems safety and SIL evaluation
- Control Systems
  - plant regulatory controls functional specification and relevant requirements
  - “control loop narratives” for complex control logic
  - Control system integration with sub-systems and package control systems
- **System Engineering**
  - System I/O Database (ESD, DCS,etc)
  - Loop diagram development
  - Database of serial/LAN connections between sub-systems & packages
  - Man-Machine interfaces (MMI) development, graphic pages, reports
  - Two Wire Loop Diagram
- **Advanced and Multi-Variable Model-Based Predictive Control process control engineering**
- Real Time Optimization applications for plants, process units and sections.
- Plant Information Systems engineering

**Significant references:**
- Snamprogetti Fano - Engineering Basic design activity for Ground Water treatment plant at Porto Garigliano Syndical plant start 1 year 2009 (used as 2 year 2009)
- Ansaldo - Robins Power Plant - 2 x 420MW groups. Company basic and electrical layout design with cable sizing, cable routing, cable list and 3D schedule. Design of Electrical Functional Logic Diagrams year 2007-2008
- FWI - EDOCN Advanced Open plant: electric HV, MV, LV switchboards, motor control centers, auxiliary distribution boards, earthing and bulk materials

**Tools of development for Automation Engineering:**
- AutoCAD, Microstation
- Access
- Calculation Spreadsheets

**ELECTRICAL ENGINEERING [20%]**

**Description of Activities:**
- System analysis study and calculations for Load Flow, Short Circuit, Cable Sizing, Protection Coordination, Earthing and Lightning protection, Lighting system.
- General Electrical design Specification, Earthing and lighting specifications.
- Design of general single line diagrams, protection and mating systems diagrams.
- Single line diagrams for high voltage (HV) switchyards, and medium (MV) and low voltage (LV) switchboards (1500 man-hour).
- FPM - EDOCN - Antwerp Refinery (Belgium). Participation in the migration and re-engineering of the Refinery valve basic and advanced process controls (1500 man-hour).

**Tools of development for Electrical Engineering:**
- ETAP
- Specialised Calculation Spreadsheets
- AutoCAD, Microstation

**Significant References:**
- Snamprogetti Fano - Engineering Basic design activity for Brodies Water treatment plant at Porto Garigliano Syndical plant start 1 year 2009 (used as 2 year 2009)
- Ansaldo - Robins Power Plant - 2 x 420MW groups. Company basic and electrical layout design with cable sizing, cable routing, cable list and 3D schedule. Design of Electrical Functional Logic Diagrams year 2007-2008
- FPM - EDOCN Advanced Open plant: electric HV, MV, LV switchboards, motor control centers, auxiliary distribution boards, Emergency Diesel Generator Set, Uninterruptible Power Supply (UPS) systems
- Switchyard and Substation Layouts
- Cable routing, power and distribution layouts
- Lighting layouts and distribution
- Cable using specification and MR
- Earthing system layout and distribution
- Specifications and MR for field power devices, lighting fixtures and distribution boards, earthing and bulk materials
- Electrical Power, earthing and lighting installation details
- Electrical equipment purchasing development, technical tabulations and evaluation
- Electrical equipment vendor follow up and Factory Acceptance Test (FAT)
- Electrical equipment specification: Site Acceptance Tests (SAT) specification and recording forms
TELECOMMUNICATIONS ENGINEERING [5%]

Description of Activities:
• Definition of the general requirements of the telecommunication systems; definition of basic design criteria
• Estimate of quantities and costs of materials to be purchased and installed
• Project programming and planning activity, review of the project time schedule, of materials supply and of identification of the critical items
• Definition of the project vendor list
• Definition of general supervision and testing criteria
• Definition of the information required and development of technical specifications for telecommunication systems
• Definition of the positioning of the main equipment (e.g. telephone exchanges, transmission equipment, PA/GA systems, etc.)
• Definition of the main routes of the telecommunication cables
• Preparation of documents for purchasing and inspection
• Issue of materials requisitions
• Issue of the technical assessment of bids
• Review of suppliers’ documentation
• Preparation of installation drawings (For Construction)
• Preparation of the necessary documents for contracting the erection works
• Project activities closeout

Significant references:
• Tecnimont – Detailed engineering for Intercom, Antintrusion, Access Control, Telephone, UAP/Structured Cabling, Trunked Radio, Emerging Audible Alarm systems – KPCO – Aromatics Project (Kuwait) – (4500 man-hour)
• Tecnimont/IPP – Engineering coordination and interface management, detailed engineering activities for Western Libya Gas Project – WARQ Gas Plant (4300 man-hour)
• Tecnimont/Abu Dhabi Polymers Company – Engineering coordination, detailed engineering and site supervision activities for LDPE plant in Ruwais – UAE (4500 man-hour)
• SPM/SPA – Telecommunication KPC Project – Khashamah field development – Final “P” for detailed telecommunication instrumentation (5000 man-hour)

SOME OF OUR CUSTOMERS

ITALY - EUROPE
ABB ALSTOM POWER ANSALDO ENERGIA EDISON ENI ENEL ENIPOWER FOSTER-WHEELER ITALIANA DI ÖL & GAS NUOVO PIONONE SAIPEM SNAM RETE GAS TECHIP TECHNIP TECNIMONT TECNOMARE

AFRICA
AGIBA BELAYA/PETROLEUM COMPANY EMCO ENPRE GUPEC MELLALAH OIL & GAS NOISCO PETROJET SONATRACH

MIDDLE EAST
BAFCO ENI IRAQ E.V. GAILAR AL MIRNAD ENGINEERING & CONTRACTING GASCO QATARGAS QATAR PETROLEUM OPERATING RASAS RAS LAAFAN INDUSTRIAL CITY SALIQ EMMCO SCOP TASNIE FACHEMICALS

FAR EAST
CHYODA CTCI HYUNDAI ENGINEERING COMPANY JGC SAMSUNG ENGINEERING SK ENGINEERING

SOME OF OUR CUSTOMERS

Eurasia
AGIP KCO BURREN RLP HELLIC PETROLEUM KARACHASANAK PETROLEUM OPERATING CO ‘KPC’ MAIZEKU – NASTI OREN PETROCARB PETROCHEMICALS AFRICA

AMERICA
AGIP KDD BURREN RLP HELLIC PETROLEUM KARACHASANAK PETROLEUM OPERATING CO ‘KPC’ MAIZEKU – NASTI OREN PETROCARB PETROCHEMICALS AFRICA

• AUTOCAD, MICROSTATION
• CALCIATION SPREAD-SHEETS

Tools of development for Telecommunication Engineering
• Autocad, Microstation
• Calculation Spread-Sheets

- INTRUSION DETECTION - CCTV - TELEPHONE SYSTEM - INTRUSION DETECTION - CCTV