



Company Presentation

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IDENTIFYING ASPROFOS

35 Years of Engineering Solutions

- The largest engineering / consultancy company in Greece
- Established in 1983 as a JV between the Hellenic Aspropyrgos Refinery and Foster Wheeler Italiana
- Member of the Hellenic Petroleum Group of Companies
- Provides engineering and consultancy services predominantly in the Oil & Gas Sectors
- Provides technical and economic solutions that cover clients' project needs

IDENTIFYING ASPROFOS

During our 35 years of operation:

1900+ employees

12.000.000 technical man hours

1900 contracts /projects

22 refinery grass-root units

110 revamping projects of medium size in units,
interconnecting and auxiliary supplies

3.800 km of high pressure gas pipelines

750 km of low pressure gas pipelines

400 km of medium pressure gas pipelines

800 km of fuel oil pipelines

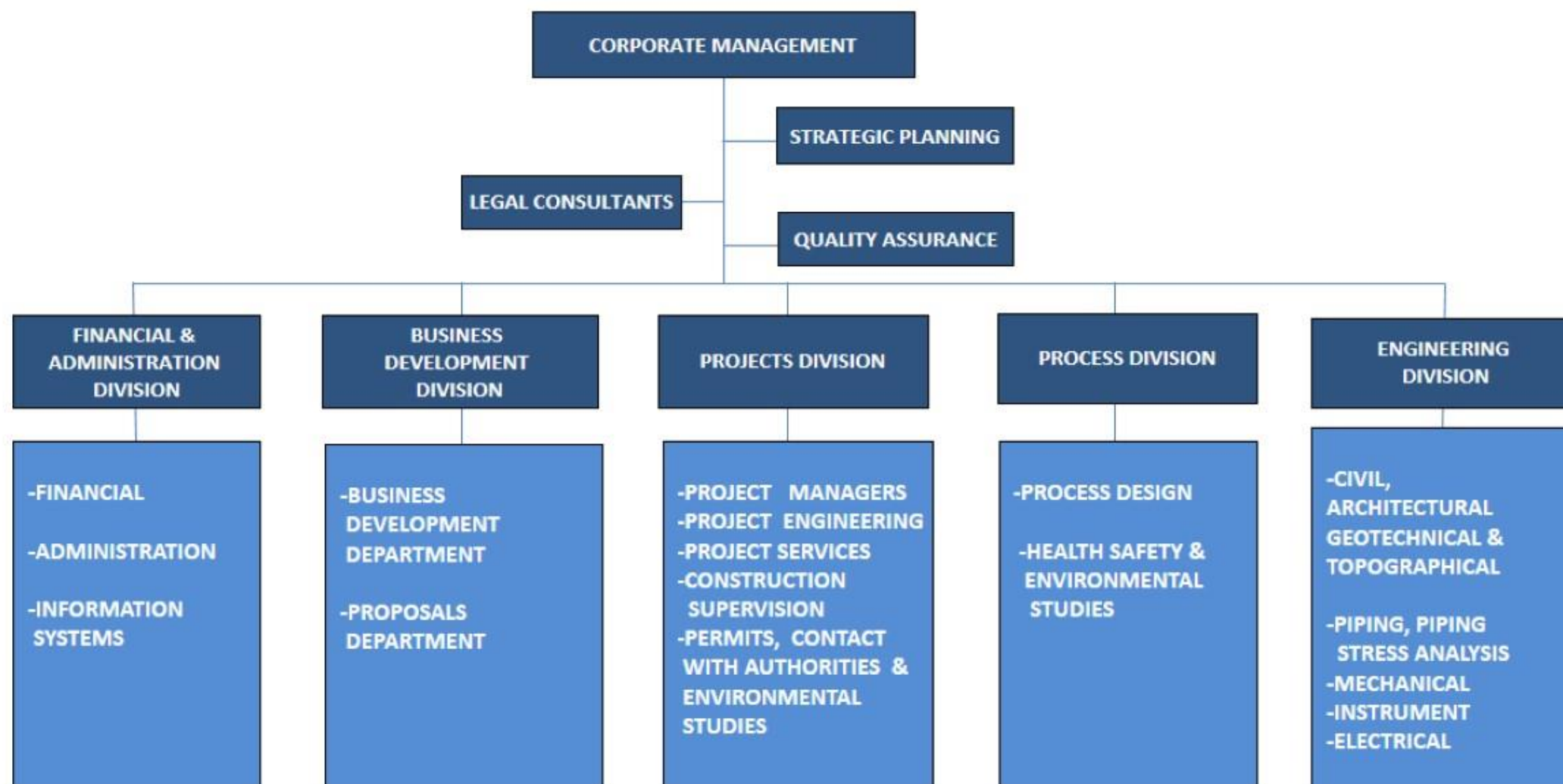
13 countries in which projects have been
successfully completed

No Failure



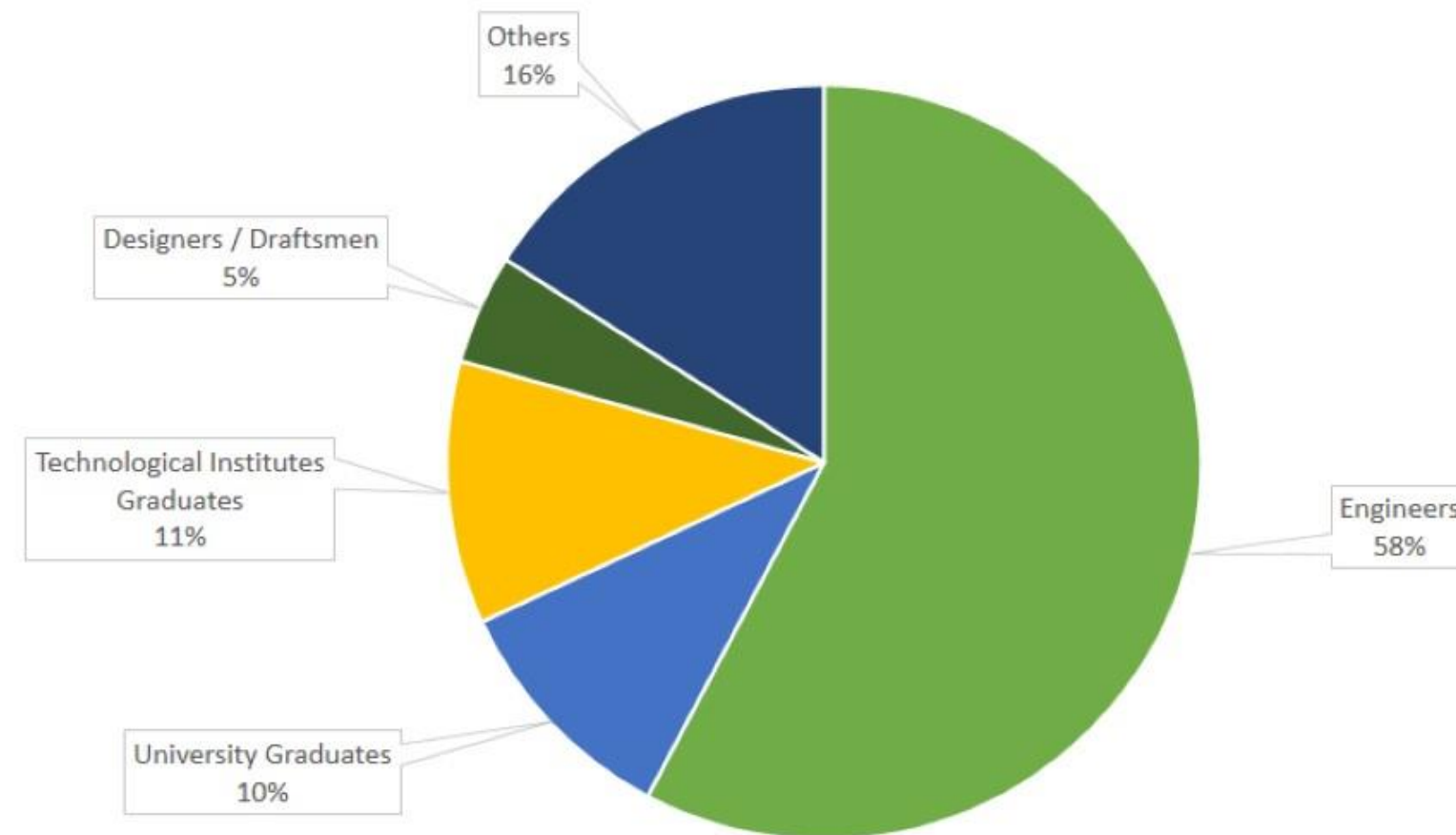
IDENTIFYING ASPROFOS

Asprofos Organization Chart



IDENTIFYING ASPROFOS

Asprofos Personnel



A workforce of 200+ persons

Our Mission

- To provide complete, reliable & high quality technical solutions, in the energy & utilities sector.
- To continuously improve our services & develop longstanding relationships of trust with our Clients.
- To approach each project as an opportunity to enhance our knowledge, our methods and procedures by investing in our tools & the technical expertise of our people.
- To keep a safe working environment, that encourages exemplary behavior and awards results and performance.



Our Vision

To be a Pioneer Technical Advisor / Engineer

- Assuring Quality, Safety & Reliability in our Projects
- Creating Value to our Customers
- Providing Progress and Perspectives to our people

*Proud of our projects and
our people*

Business Areas

REFINERIES



NATURAL GAS



STORAGE TERMINALS



POWER PLANTS



INFRASTRUCTURE



ENVIRONMENT

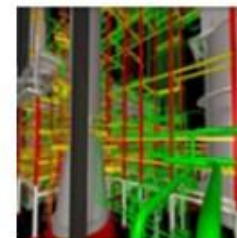


FIELDS OF EXPERTISE



Process Design

- Conceptual design / Basis of design
- Pre-feasibility / feasibility study
- Basic Design
- FEED
- Engineering Support
- Optimization of Operation Schemes and Energy Efficiency
- License Technology Selection Studies
- Operating Manuals
- Test Run
- Dynamic Simulation



Detailed Design

- Project Engineering and Coordination (Multidisciplinary)
- Electrical
- Technological (non-rotating mechanical equipment)
- Machinery (rotating equipment)
- Material Selection
- Instrumentation and Automation Systems
- Civil and Architectural
- Geological
- Surveying
- Piping design and Stress Analysis
- Piping Material Take - Off and Specifications
- Preparation of Material Requisitions

FIELDS OF EXPERTISE



Construction Supervision

- Site Supervision
- Construction Management
- Construction Consulting Services
- Cost Control and Invoice Approval
- Contractor Claims Management
- Preparation of as-built Documentation
- Planning and Reporting
- Occupational Health and Safety Management
- Administration of Third Party Inspection

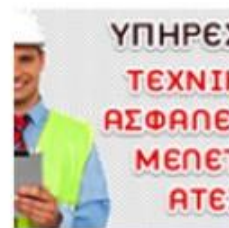


Project Management

- Project Planning - Control
- Report Preparation
- Cost Estimation
- Cost Control



FIELDS OF EXPERTISE



Safety Studies

- Internal Contingency Plans
- SEVESO II, HAZOP etc.
- Explosion Protection Documents (EPDs) and Drawings (ATEX)
- Hazardous Chemicals Management Studies
- System & Documentation of Health and Safety Preparation
- Installation & Personnel Security Studies (SECURITY SYSTEMS)
- Fire Prevention Studies and Fire Fighting Studies
- Natural Gas Pipeline Systems Safety Studies
- Risk Management



Specialized Services

- On-the-job Training of Refinery Operators & Maintenance Technicians
- Re-engineering Consultancy Services
- EPC Bid Support
- Owner's Engineer
- Energy Market Analysis
- Energy Efficiency Consultancy
- ISO Certification Preparation

FIELDS OF EXPERTISE



Procurement Services

- Cost estimation
- Procurement Coordination
- Bidders List, RFQs and ITB Preparation
- Technical & Economical Bid evaluation
- Negotiation Support
- LOA / PO preparation
- Inspection Services and Administration of Third Party Inspection
- Expediting Services



Waste Management Services

- Liquid Wastes Management Study
- Solid Wastes Management Study
- Hazardous and Toxic Wastes Management Study
- Wastes Management Technology Selection
- Wastes-to-Energy
- Wastes Treatment Facilities Design

FIELDS OF EXPERTISE



Permit Engineering & Environmental Services

- ESIA (Environmental and Social Impact Studies) - Onshore and Offshore
- GIS (Geodatabase Structure and Management, Applied Spatial Analysis, Remote Sensing and Satellite Imagery Interpretation, Technical Support of Forest Characterization Issue)
- Stakeholder Engagement
- Permit Engineering & contact with Authorities
- Land Easement and Acquisition Consulting
- Route Selection and Optimization
- Environmental Compliance with National and International Legislation
- Permitting Consulting
- Execution of Atmospheric & Water Dispersion Models



HSE Management Systems & Consulting Services

- Application of EMAS Environmental Management Systems
- Application of ISO 14001 in Industrial Systems (Oil, Gas and Refinery Sectors)
- OHSAS 18001 (Occupational Health and Safety Management Systems)
- HACCP (Hazard Analysis and Critical Control Points)
- Hazardous Chemical Substances Management Systems
- Other Environmental Management Systems (i.e. PERS)

FIELDS OF EXPERTISE



Owner's Engineer

- Technical Documents and EPC Tender
- Bid Evaluation
- Contract Negotiation
- Cost Benefit Analysis
- Technical Advising / Consultancy Services
- Review Engineering Designs
- Develop QA/QC plans
- Project Management
- Procurement Management
- Construction Management
- Review Commissioning and Testing Procedures
- Operation and Maintenance Review
- (Services are indicative)



IDENTIFYING ASPROFOS

Know-how

Design according to the International Codes and Standards in Oil & Gas Sector:

- API stds (American Petroleum Institute)
- ASME stds (American Society of Mechanical Engineers)
- ANSI stds (American National Standards Institute)
- ASME PTC (Performance Test Codes)
- ISO standards (International Standard Organization)
- NFPA stds (National Fire Protection Association)
- Eurocodes

Deep acquaintance of the specifications of the most important Engineering Companies in Oil & Gas Sector:

- FW Eng. Std's (Foster Wheeler Engineering Standards)
- EXXON GP's (EXXON Global Practices)
- UOP specs (UOP specifications)



WHY ASPROFOS?

▪ Successful Engineering Solutions

- **Extensive know-how** in all phases of high complexity projects
- High skilled and **experienced personnel**
- **Flexible structure** that enables the successful management of a wide variety of projects
- Focus on understanding and meeting the specific needs of each and every customer
- Provider of services in **cooperation with the Hellenic Petroleum Refineries**, such as on – the – job – training, best practices etc.
- ISO Certified:
 - ✓ BS-EN-ISO 9001:2008 for Quality Management System
 - ✓ BS EN ISO 14001:2004 for Environmental Management System
 - ✓ OHSAS 18001:2007 for Occupational Health & Safety Management System
 - ✓ ELOT 1429:2008 for Managerial Capability System (Hellenic Organization Standardization)
- Offering of **one-stop-shop services**, from permits to start-up



Infrastructure

INFRASTRUCTURE

■ BUILDING

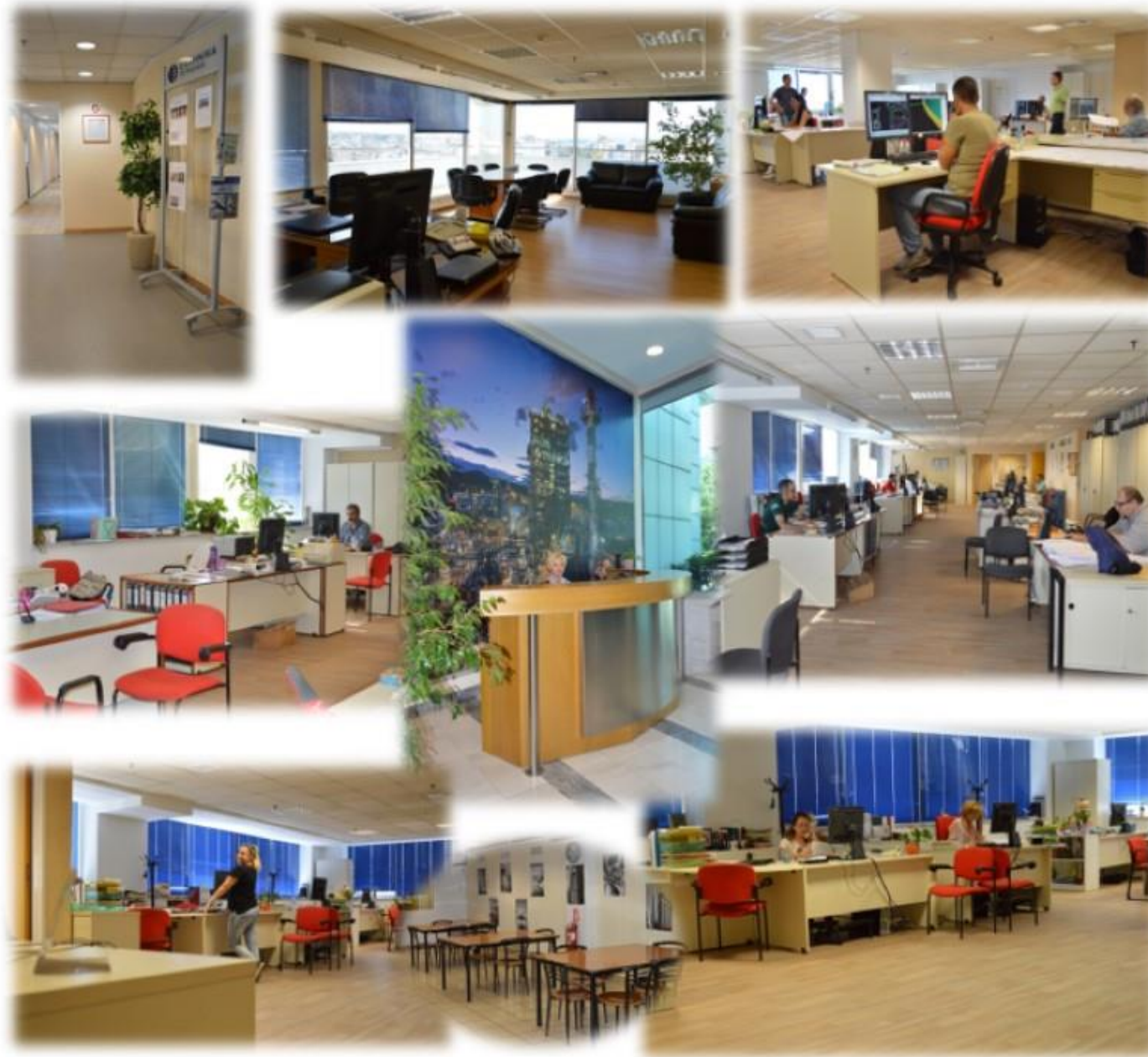
PRIVATELY OWNED BUILDING (8 stories) of total surface of 6.250 m²

- Auxiliary Building for parking
- Capability of 350+ working seats
- Full networking (data/voice/etc.) capability
- Data center with 20+ servers, 30 active network appliances, UPS and 60+ peripherals (photocopiers, printers, scanners, etc.)
- Fully integrated digital telephone center





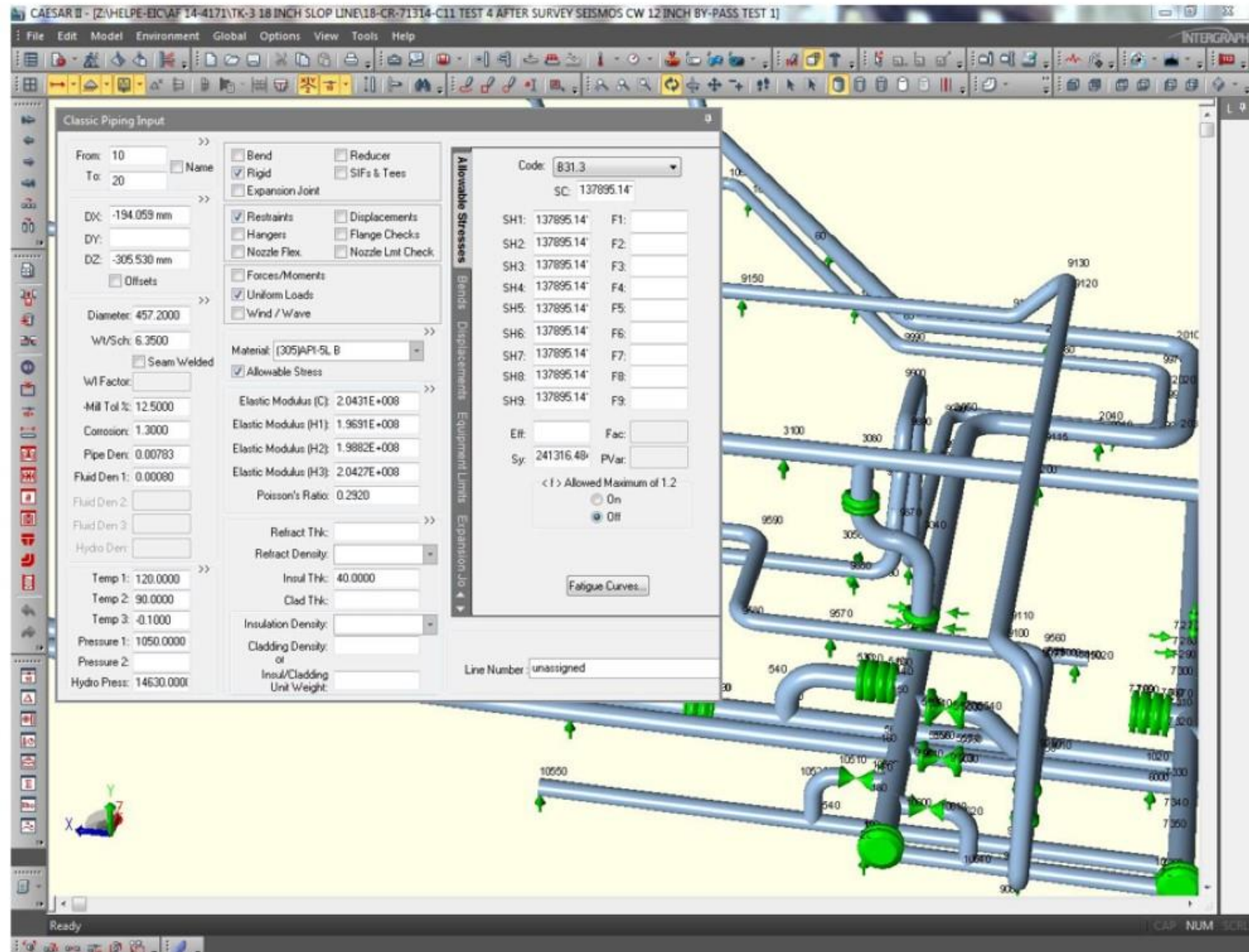
ASPROFOS OFFICES



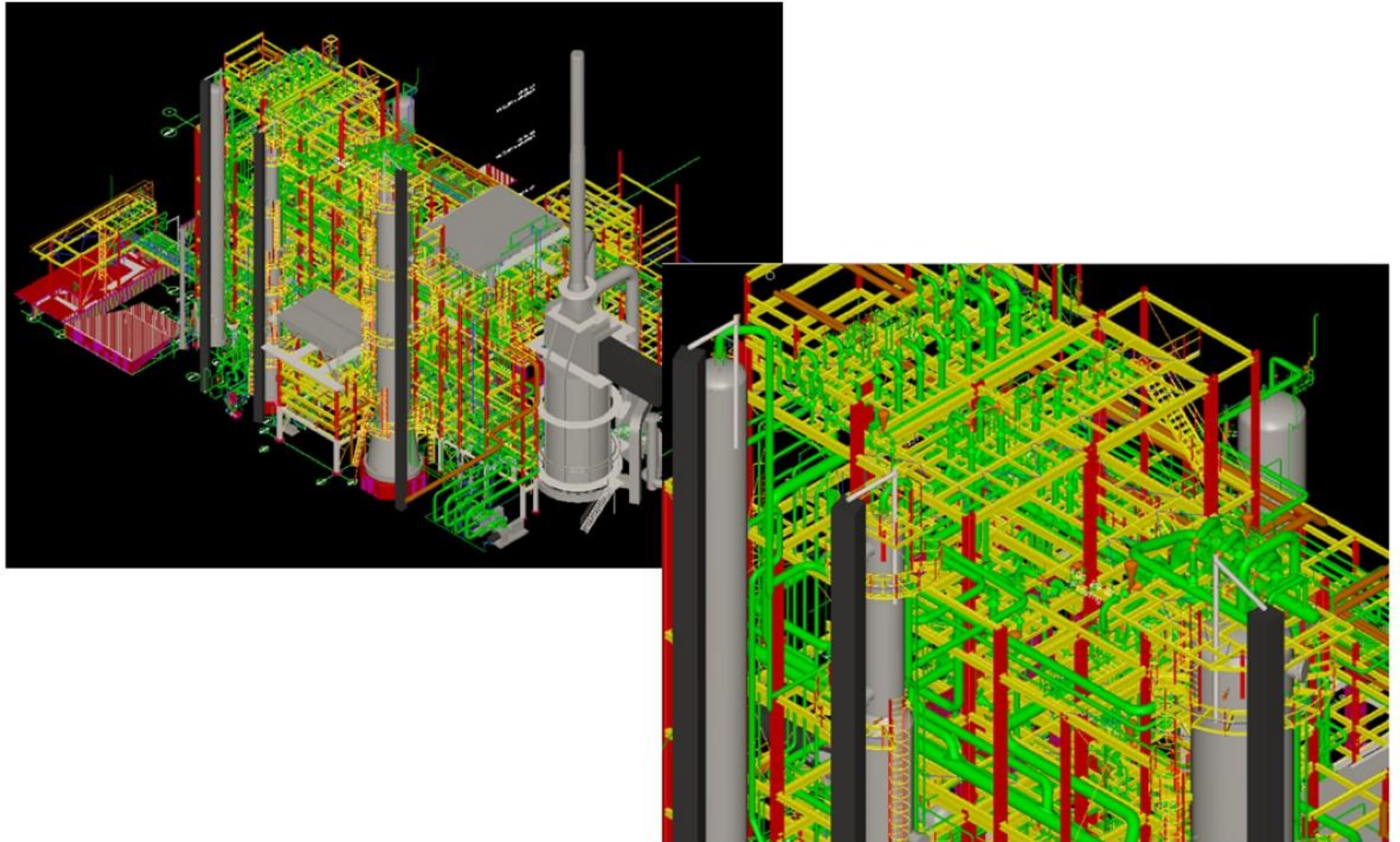
INFRASTRUCTURE

SPECIALIZED SOFTWARE		
PIPELINE STUDIO	ETABS NONLINEAR	4M (FINE - ADAPT F/CALC)
DESIGN II	ETABS PLUS	DAPPER
FATHOM	SAFE FOR ETABS	CAPTOR
ASPEN FLARE SYSTEM ANALYSER	EC PRAXIS FOR ETABS	AUTOCAD
ASPEN HYSYS	STEREOSTATIKA	AUTOCAD MAP 3D
ASPEN SHELL & TUBE EXCHANGER	PROSTEEL 3D	AUTOCAD ARCHITECTURE
ASPEN SHELL & TUBE MECHANICAL	INSTANT	e CM PROCOST
ASPEN IN-PLANT COST ESTIMATOR	FAGUS / CEDRUS / CEDRUS+ / STATIC	PDS 3D
COMPRESS	FESPA	INSTRUCALC
TANK	B-MAPS	PRIMAVERA ENTERPRISE
CAESAR II	CIVIL LT ΠΟΛΗ	PHAST
ANSYS	CADWARE	MERIDIAN
SMART PLANT REVIEW	MICROSTATION	CADWORKS
SMARTSKETCH	GGAD - GGTOP	

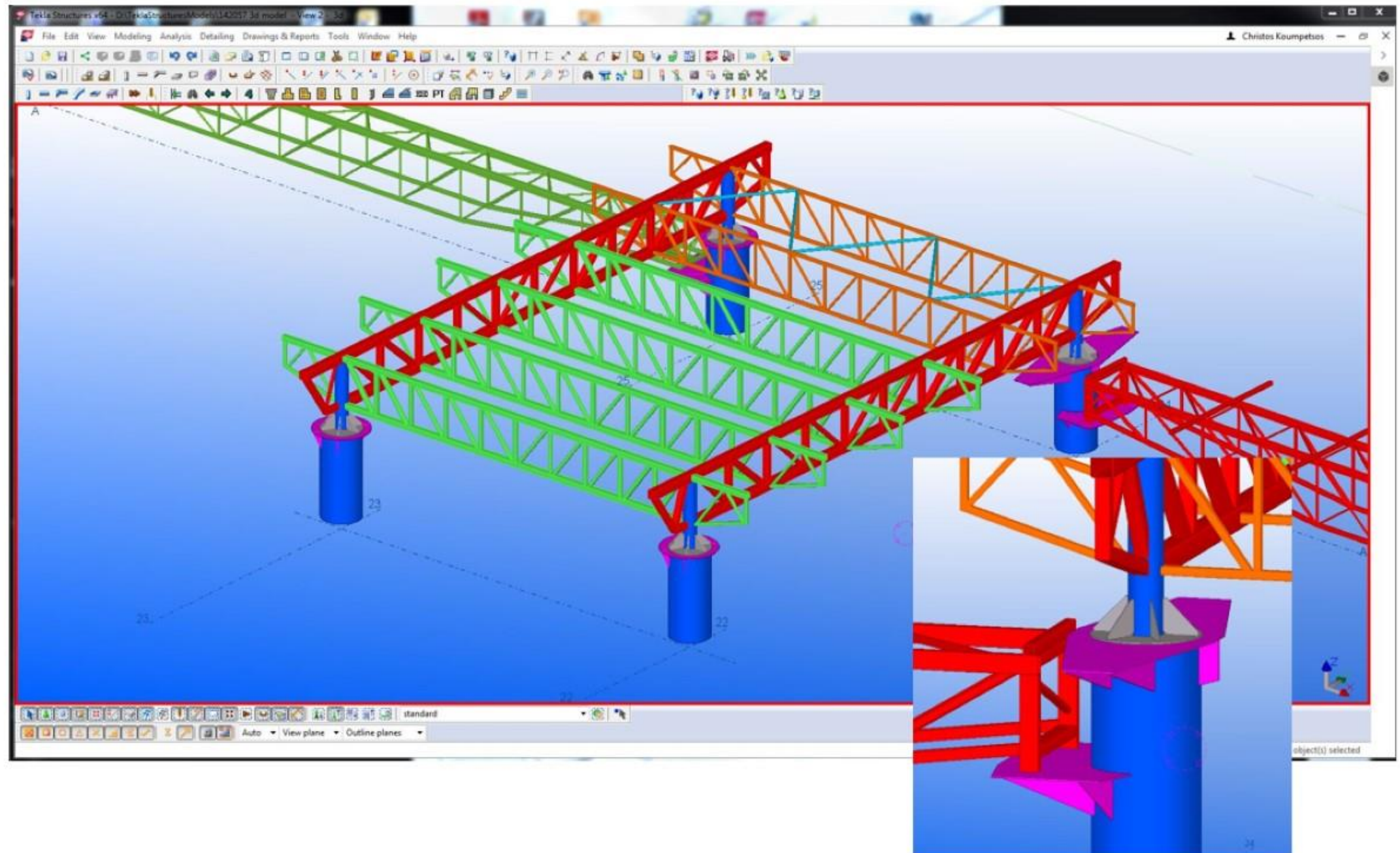
TECHNICAL SOFTWARE



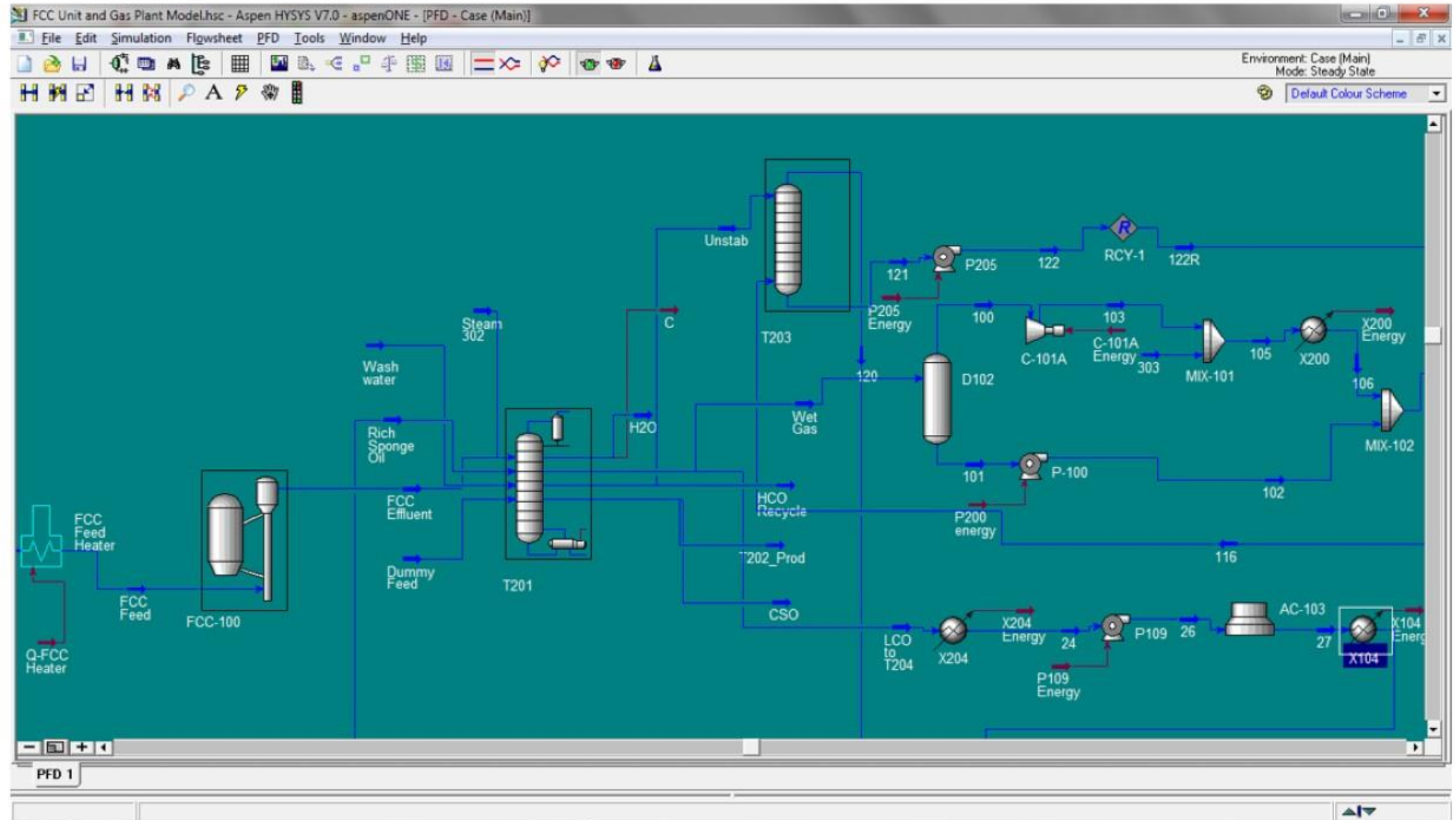
TECHNICAL SOFTWARE



TECHNICAL SOFTWARE

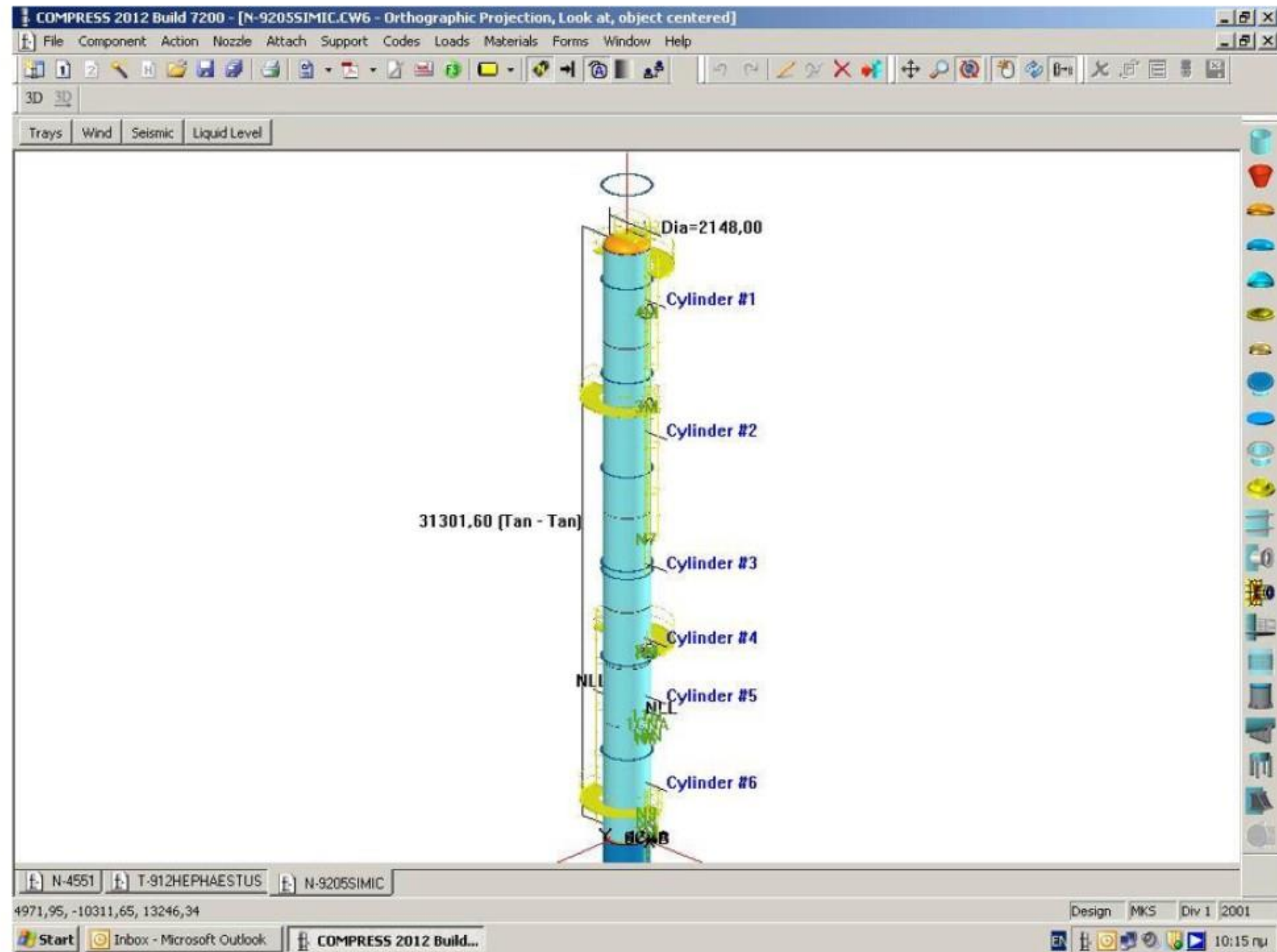


TECHNICAL SOFTWARE



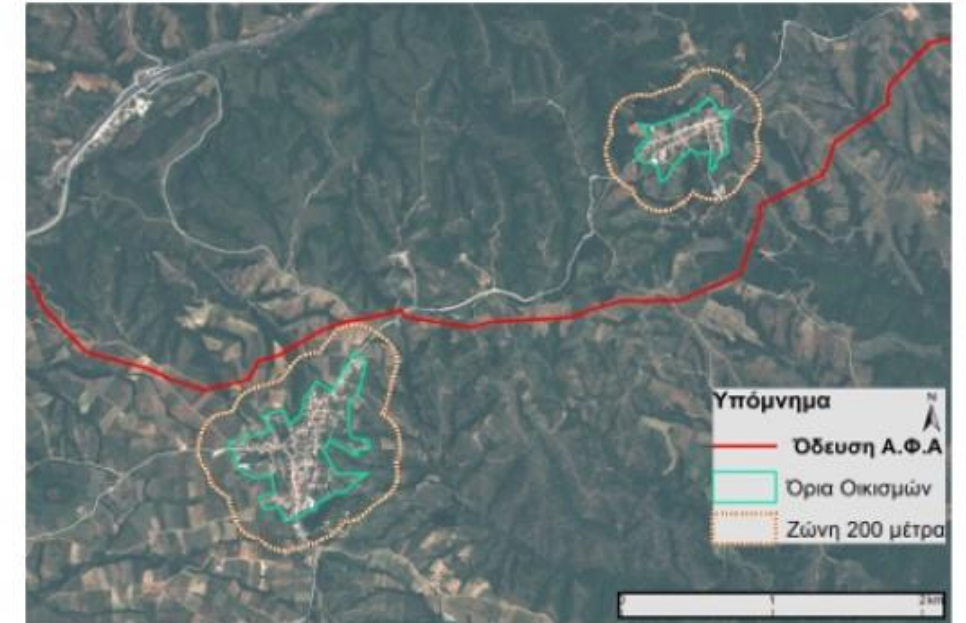
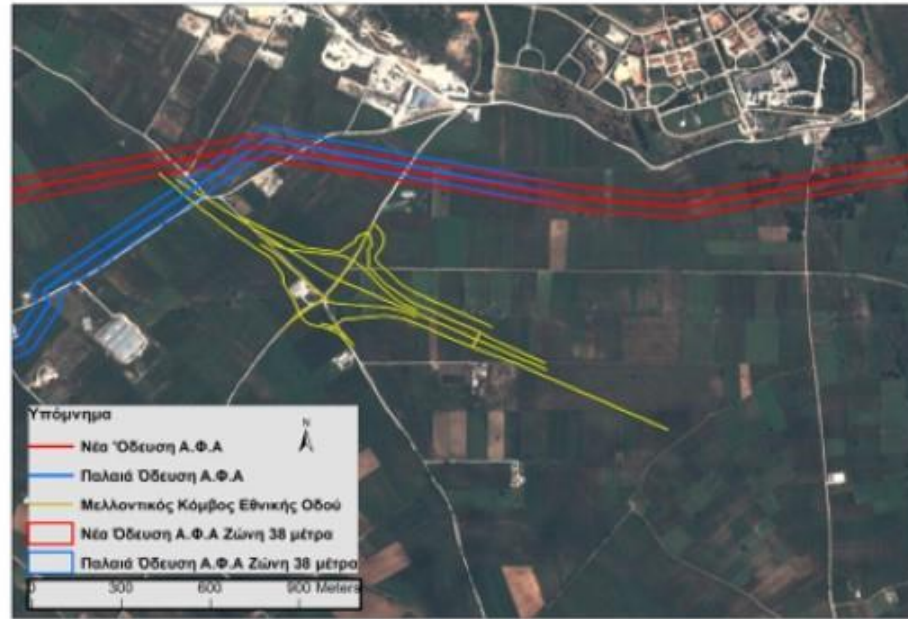


TECHNICAL SOFTWARE





TECHNICAL SOFTWARE



A blue-tinted photograph of an industrial facility, likely a refinery or chemical plant. The image shows a complex network of pipes, walkways, and structural steel. In the foreground, there are large, cylindrical storage tanks. In the background, several tall distillation columns or towers are visible, some with ladders or scaffolding. The facility is illuminated by numerous lights, creating a bright contrast against the blue sky. The overall scene conveys a sense of large-scale industrial operations.



Clients





OUR CLIENTS

HELLENIC PETROLEUM GROUP

- | | |
|--|--|
| <ul style="list-style-type: none"> ○ HELLENIC PETROLEUM – ASPROPYRGOS, THESSALONIKI & ELEFSIS REFINERIES ○ EKO – ELDA INDUSTRIAL AND COMMERCIAL PETROLEUM S.A. ○ JUGOPETROL A.D. KOTOR ○ DIAXON S.A. | <ul style="list-style-type: none"> ○ EL.PE.T-BALKANIKI S.A. ○ ELPET–THRAKI S.A. ○ OKTA CRUDE OIL REFINERY A.D., FYROM ○ HELLENIC PETROLEUM INTERNATIONAL AG ○ GLOBAL PETROLEUM ALBANIA SH.A |
|--|--|

PUBLIC COMPANIES

- | | |
|--|--|
| <ul style="list-style-type: none"> ○ HELLENIC STEEL ○ HELLENIC AEROSPACE INDUSTRY (HAI) S.A. ○ GREEK INDUSTRIAL DEVELOPMENT BANK (ETVA) ○ ATHENS AIRPORT S.A. ○ NATIONAL PHARMACEUTICAL COMPANY ○ GREEK POWDER AND CARTRIDGE COMPANY ○ OLYMPIC AIRWAYS ○ TRAM S.A. | <ul style="list-style-type: none"> ○ ATHENS – PIRAEUS ELECTRIC BUSES ○ THERMAL BUS COMPANY OF ATHENS ○ HELLENIC INDUSTRIAL AND MINING COMPANY (ELEVME) ○ PPC RENEWABLES S.A. ○ PUBLIC COMPANY FOR THE CONSTRUCTION OF HEALTHCARE FACILITIES (DEPANOM) S.A. ○ HELLENIC ACCREDITATION SYSTEM (ESYD) S.A. |
|--|--|

HELLENIC UTILITIES COMPANIES

- | | |
|--|--|
| <ul style="list-style-type: none"> ○ PUBLIC POWER CORPORATION (PPC) ○ HELLENIC GAS TRANSMISSION SYSTEM OPERATOR (DESFA) ○ PUBLIC GAS CORPORATION (DEPA) ○ ATHENS WATER SUPPLY AND SEWERAGE COMPANY (EYDAP) | <ul style="list-style-type: none"> ○ NATURAL GAS DISTRIBUTION COMPANY OF ATTICA (EPA ATTIKIS) ○ NATURAL GAS DISTRIBUTION COMPANY OF THESSALONIKI (EPA THESSALONIKIS) ○ NATURAL GAS DISTRIBUTION COMPANY OF THESSALIA (EPA THESSALIAS) |
|--|--|



OUR CLIENTS

PUBLIC SECTOR

- | | |
|---|---|
| ○ MINISTRY OF ECONOMY AND FINANCE | ○ REGULATORY AUTHORITY FOR ENERGY (RAE) |
| ○ MINISTRY OF ENVIRONMENT, PHYSICAL PLANNING AND PUBLIC WORKS | ○ GENERAL SECRETARIATS OF 13 GREEK ADMINISTRATIVE REGIONS |
| ○ MINISTRY OF TRANSPORT AND COMMUNICATIONS | ○ EUROPEAN UNION |
| ○ MINISTRY OF DEVELOPMENT | ○ UNIVERSITY OF THESSALONIKI |
| ○ MINISTRY OF DEFENCE | ○ MUNICIPALITY OF PTOLEMAIS |
| ○ GENERAL SECRETARIAT OF OLYMPIC GAMES 2004 | ○ MUNICIPALITY OF KEFALONIA |
| ○ GENERAL SECRETARIAT OF R & D | ○ MUNICIPALITY OF VRONTADOS, CHIOS |
| | ○ MUNICIPALITY OF VOLOS |

CONTRACTING COMPANIES

- | | |
|----------------------------|------------------------|
| ○ J & P INTERNATIONAL S.A. | ○ ETEP S.A. |
| ○ TECHNIKI ENOSIS S.A. | ○ GHIZZONI HELLAS S.A. |
| ○ ERGOTEM S.A. | ○ BIOKAT S.A. |
| ○ METKA S.A. | |

FOREIGN COMPANIES

- | | |
|---|--|
| ○ INA, CROATIA | ○ STROYTRANSRAZ PROMETHEUS |
| ○ MTMM, KSA | ○ PETROCONSULT SRL, ROMANIA |
| ○ FOSTER WHEELER ITALIANA | ○ KBC, U.K. |
| ○ BROWN & ROOT, U.K. | ○ BURNS & MCDONNELL, U.S.A. |
| ○ ILF CONSULTING ENGINEERS, GERMANY | ○ NATIONAL PETROLEUM COMPANY, JORDAN |
| ○ TECHNIP S.A., ITALY | ○ PROJECT PETROL LTD., CYPRUS |
| ○ C.C.I.C.L. | ○ CYPRUS'S REGULATORY AUTHORITY FOR ENERGY |
| ○ TELEPLAN S.A. | ○ ELECTRICITY AUTHORITY OF CYPRUS |
| ○ PETROLEUM INDUSTRY OF SERBIA, NIS – OIL REFINERY OF PANCEVO | ○ CYPRUS TRANSMISSION SYSTEM OPERATOR |
| ○ CHROME OIL SERVICES LTD., NIGERIA | ○ TECON ENGINEERING GMBH |
| ○ E.ON NEW BUILD & TECHNOLOGY GMBH | ○ ARCHIRODON GROUP NV |
| ○ VTTV | |

OUR CLIENTS

HELLENIC PRIVATE COMPANIES

- | | |
|---|------------------------------|
| ○ OLYMPIC FUEL COMPANY (O.F.C.) | ○ THERMIE SERRES S.A. |
| ○ EAKAA S.A. | ○ AG PETZETAKIS S.A. |
| ○ METVA S.A. | ○ PROMETHEUS GAS S.A. |
| ○ NITROGENOUS FERTILIZERS COMPANY (AEVAL) | ○ GREEN OIL S.A. |
| ○ EKO-SHELL-BP-MOBIL-TOTAL CONSORTIUM | ○ EVROLAK S.A. |
| ○ MOBIL OIL HELLAS | ○ OTM LTD. |
| ○ VIOLEX - BIC | ○ L' AIR LIQUIDE HELLAS S.A. |
| ○ INTERCHEM HELLAS S.A. | ○ HELLENIC STEEL S.A. |
| ○ HELLENIC ALUMINA INDUSTRIES S.A. | ○ PLANET ERNST & YOUNG S.A. |
| ○ THESSALIKI PULP AND PAPER INDUSTRY | ○ TECHNIKI ENOSIS S.A. |
| ○ CAMBAS, PRODUCTION OF WINES AND LIQUORS | ○ ERGOTEM S.A. |
| ○ INTEMACO S.A. | ○ METKA S.A. |
| ○ SILVER & BARYTE ORES MINING CO. | ○ ETEP S.A. |
| ○ VIA EGNATIA S.A. | ○ EKME S.A. |
| ○ PETROLA S.A. | ○ BWSC HELLAS S.A. |
| ○ TECHNIPETROL HELLAS S.A. | ○ TECHNIKI ENERGEIAKI S.A. |
| ○ ENELCO S.A. | ○ EXERGIA |
| ○ TITAN | ○ ALPHA MELETITIKI S.A |
| ○ GREEN DEVELOPMENT KILKIS S.A. | ○ SYRMA |



BUSINESS DEVELOPMENT

- Countries where ASPROFOS has been active





Presentation of Projects

PRESENTATION OF PROJECTS

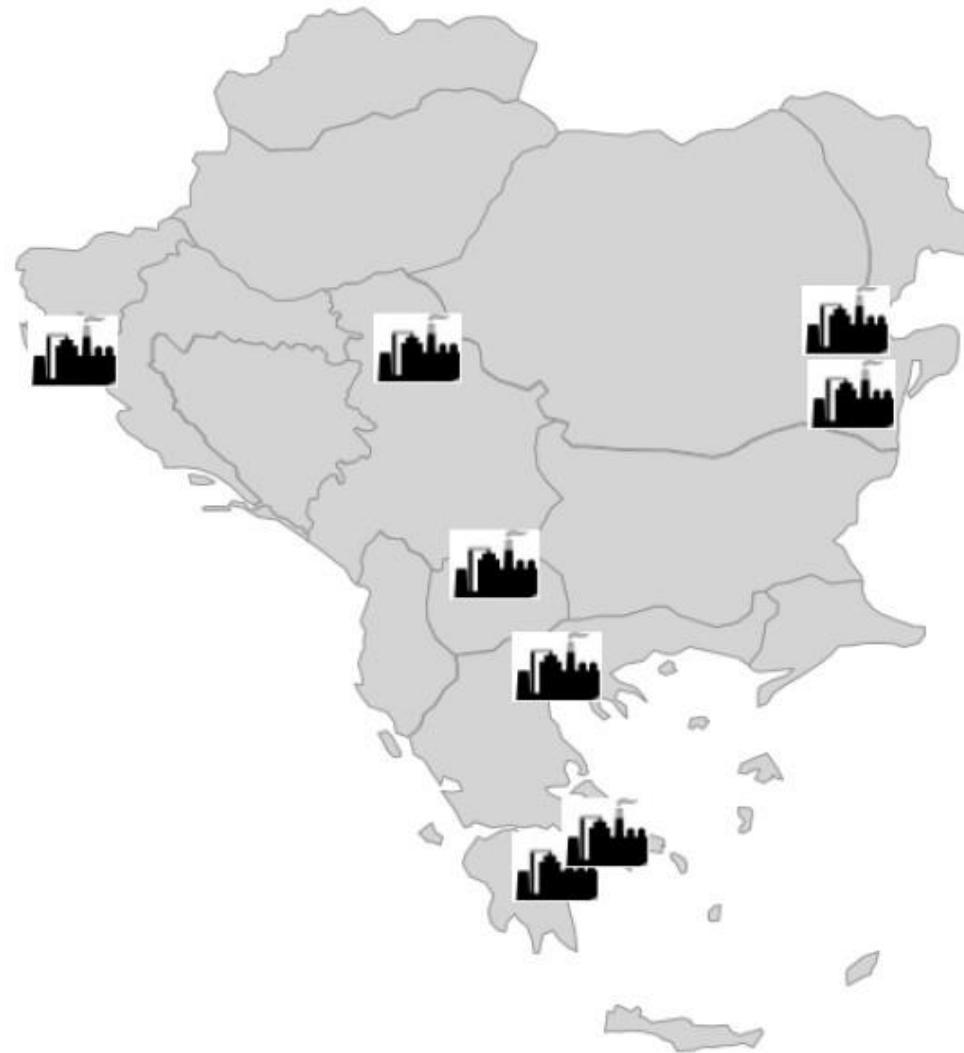
Refineries





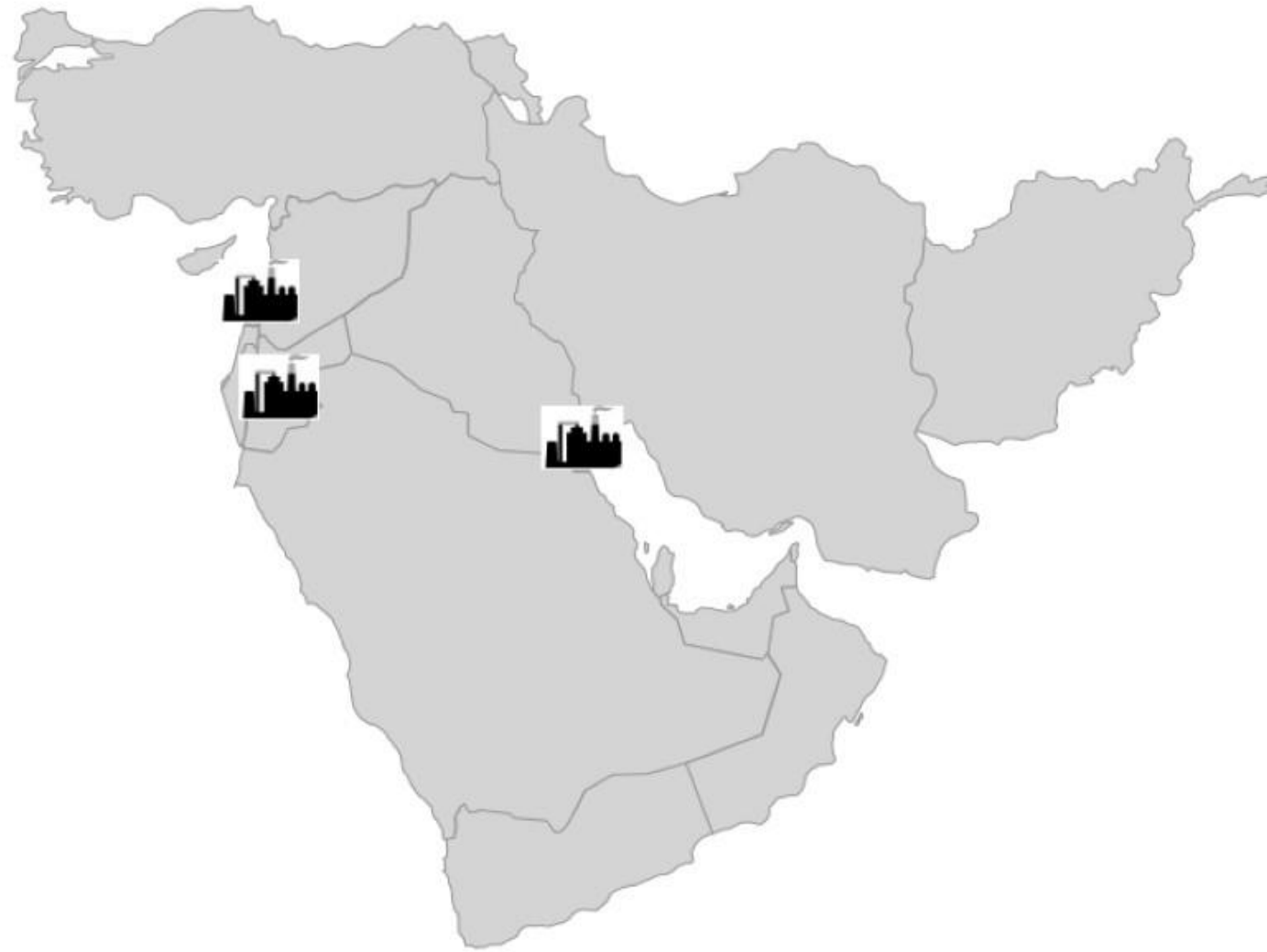
PRESENTATION OF PROJECTS

- Experience in Refineries (1/2)



PRESENTATION OF PROJECTS

- Experience in Refineries (2/2)



PRESENTATION OF PROJECTS

■ HELPE Elefsis Refinery Upgrading Project 2008-2013

Major involvement during upgrading of Elefsis refinery, with a budget of 1,200 million Euros, which aimed towards optimization of refinery production with simultaneous increase in white products, minimization of wastes and enhancement of safety. The refinery was entirely modernized with the addition of the following new units:

- Vacuum Distillation (44,900 BPSD)
- Hydro cracker (53,000 BPSD)
- Flexicoker (20,000 BPSD)
- Hydrogen Production (125,000 Nm³/hr) and four new boilers.
- Sour Water Treatment (100 t/hr)
- Amine Treatment (400 t/hr)
- Sulphur Recovery (282 tons/day) & Tail Gas Treatment

Services:

- Engagement in Front End Engineering Design
- Detailed Design of Crude Distillation unit revamp
- Detailed Design of offsites facilities with change of service in storage tanks and pumping networks
- Detailed Design of Waste Water Treatment unit, Nitrogen unit, Water Demineralization unit
- Preparation of the Fire Fighting protection network study, the Environmental Impact Study and a Seveso type Safety Study
- Handling the construction permitting issues
- Participation in construction supervision (still on-going)



PRESENTATION OF PROJECTS

■ Basic Design for HAZOP recommendations

Units:

- Crude Distillation Unit (CDU-III)
- Crude Distillation Unit (CDU-IV)
- LPG Storage and Loading Facilities
- Flexicoker Unit (U-32)

Client: Hellenic Petroleum / Elefsis Refinery





PRESENTATION OF PROJECTS

▪ Existing Units Modifications for Operation with the New HELPE- EIC Refinery Scheme (Basic and Detail Engineering)

Units:

- Crude Distillation Unit No III (CDU-III Upgrading –LGO Maximization Project)
- Crude Distillation Unit No IV (CDU-IV Upgrading)
- Existing Boiler House (U-7 Upgrading)
- Existing Hydrodesulphurization Complex Upgrading (HDS U-100/200/300/400/500/600 Upgrading)
- New Increased Duty Heater Installation at Crude Distillation Unit No III
- Light Ends Upgrading - Saturated Gas Plant Revamp at Crude Distillation Unit No III
- New LPG Sweetening Unit
- Existing Hydrotreating Unit (U-100) Revamp

Client: Hellenic Petroleum / Elefsis Refinery



PRESENTATION OF PROJECTS

- **Extended Modifications to the Flexicoker Unit**
 - Flexikocer Heater Overhead Section Rerating/Debottlenecking Modifications
 - Flexikocer Flushing Oil System Changes
 - Instrumentation Flashing Panels
 - Alternative HBG Purging Supply to Instrumentation
 - Rupture Discs at Heat Exchangers Relocation and Set Pressure Correction
 - New Trim Air Cooler at Fractionator Medium Pumparound Stream
 - HHKGO Stream from Bottom of Fractionator to Suction Hydraulic Study for Capacity Increase
 - Fractionator Wash Water Circuit Modifications

Client: Hellenic Petroleum / Elefsis Refinery

PRESENTATION OF PROJECTS

■ HELPE Aspropyrgos Refinery Modernization 1990-2009

New Units:

- Benzene Saturation (20,000BPSD)
- Fluid Catalytic Cracking (42,000BPSD)
- Crude & Vacuum Distillation (54,000BPSD)
- Naphtha Hydrodesulphurization upgrade (25,000BPSD)
- Gas Oil Desulfurization from 40 to 10 ppm (UOP License)
- Propane/Propylene Splitter (50M³/hr)
- Fuel Oil Blender (8,500BPSD)
- Sulphur Recovery upgrade (200t/d)
- Olefin Conversion (100,000MT/Yr)
- TAME (130 T/hr)

Services:

- Project Management
- Basic Design
- Detailed Engineering
- ITB Preparation
- Procurement Services
- Construction Supervision & Start-up assistance





PRESENTATION OF PROJECTS

■ Basic Design for HAZOP recommendations (incl. cost estimation)

Units:

- Vacuum Unit (U-3100)
- Catalytic Reformer (U-3300)
- LPG Recovery Unit (U-2600)

■ Basic Design for Energy Efficiency Upgrade

Units:

- Amine Unit (U-3500) U-2600 LPG Recovery Unit
- Naphtha Hydrodesulphurization (U-3200)
- Diesel Desulphurization (U-3400)

■ Basic Design for the installation of LPG Mounded Bullets

■ Detailed Engineering Study for the installation of new Liquid Sulphur Tank

Client: Hellenic Petroleum / Aspropyrgos Refinery

PRESENTATION OF PROJECTS

■ HELPE Thessaloniki Refinery Upgrade 1999 - 2009

New Units:

- Isomerization (Penex) (8,300BPSD)
- Powerformate Splitter (12,000BPSD)
- Crude Oil Desalter (100,000BPSD)
- Vacuum Distillation (8,000BPSD)
- Diesel Desulphurization to 10 ppm – Ultra Low Sulfur Atmospheric Diesel Oil (Ulsado) (17,800BPSD)
- Desulphurization of Low Pressure Fuel Gas (3,810 Standard m³/hr)
- Polypropylene Production Plant (180,000t/yr)
- Hydrogen Production (6,842Nm³/hr)
- Hydrogen Purification (5,890Nm³/hr)
- Utilities Expansion: 2X35 t/hr Boilers, 2x80 t/h Demineralized Water, 250 t/hr Deaerator/BFWpumps, 6,000 Standard m³/hr Instrument & Plant Air



Services:

- Project Management
- Basic Design
- Detailed Engineering
- ITB Preparation
- Procurement Services
- Construction Supervision



PRESENTATION OF PROJECTS

■ HELPE Thessaloniki Refinery (ongoing project)

New Unit:

- Sulphur Recovery Unit (40TPD) based on Claus Technology, to be installed in parallel and fully integrated with the existing unit.

Services to be provided:

- Project Management
- ITB preparation & Bid evaluation for technology selection
- Budget estimation
- Detailed Engineering
- Procurement
- Construction Supervision

Status:

- Bid evaluation for technology selection



PRESENTATION OF PROJECTS

▪ HELPE Thessaloniki Refinery (ongoing project)

New Unit:

- Flare Gas Recovery Unit (312kg/h)

Services:

- Project Management
- ITB preparation & Bid evaluation
- Vendor engineering follow-up
- Budget estimation
- Basic Design of installation & interconnecting
- Detailed Engineering of installation & interconnecting
- Area classification

Status:

- Under construction



PRESENTATION OF PROJECTS

▪ HELPE Thessaloniki Refinery (ongoing project)

Light Ends unit revamp:

- Addition of new steam reboilers
- Modifications in two existing towers
- Addition of new pumps

Services:

- Project Management
- Basic Design
- Detailed Engineering
- Budget estimation

Status:

- Basic Design phase



PRESENTATION OF PROJECTS

▪ HELPE OKTA Refinery Modernization (Skopje) 2003 - 2006

New Units:

- Refinery Upgrading
- Sour Water Stripper (22 m³/hr)
- Gasoil Hydrodesulphurization (8,000BPSD)
- Crude Distillation (Preheating train optimization) (55,000BPSD)
- Sulphur Recovery (12 t/hr)

Services:

- Project Management
- Feasibility Studies
- Basic Design
- Detailed Engineering
- ITB Preparation & Bid Evaluation



PRESENTATION OF PROJECTS

■ Croatia

- ✓ **CDU Environmental & Efficiency improvement in Rijeka Oil Refinery (July 2013 – On going)**

Services:

- Detailed Design
- Budget Estimate
- Basic Design
- Construction Supervision
- Health Safety and Environmental Studies
- Project Management



- ✓ **Amine Unit Installation in Rijeka Oil Refinery (July 2014 – On going)**

Services:

- Detailed Design
- Budget Estimate
- Basic Design
- Project Management



Client: INA

PRESENTATION OF PROJECTS

▪ Serbia

✓ Vacuum Distillation Unit Revamp (1996-2004)

Services:

- Basic Design-Process Simulation
- Detailed Engineering
- Project Management
- Procurement Services
- Construction Supervision
- Start Up Assistance

✓ Feasibility Study and Basic Design for the R.O.V. Project (March 2013-June 2013)

Services:

- Budget Estimate
- Basic Design
- Health Safety and Environmental Studies
- Feasibility Study
- Project Management

Client: NIS – NAFTGAS PROMET / Pancevo Refinery



PRESENTATION OF PROJECTS

▪ Jordan

✓ Services for CDU HEAT RECOVERY AUDIT (November 2015 - On going)

Services:

- Process Simulation
- Optimization of pre-heat train with addition of new heat exchangers
- Examine Distillation Tower Temperature Profile
- Determine the proper location for the PLATE heat exchanger
- Project Management

Client: Jordan Petroleum Refinery Company



PRESENTATION OF PROJECTS

■ Romania

✓ Feasibility Studies (July 2017 - On going)

- New multiproduct SPM (gasoil, gasoline and crude oil), new trading storage tank farm, and high capacity railway ramp.
- Multimodal logistic platform in berths 1 – 4 Midia for general cargoes, ferry connection, containers, LNG, solids in bulk and liquids in bulk.
- IPPA LPG and Fuels loading and storage optimization – 4 (and last) development level of this terminal.
- Old Fuel Railway Ramp Upgrade for Fuel Oil and Diesel Loading/Unloading railway Ramp Upgrade.
- Cooling Water System G1 for Petromidia Refinery of Rompetrol Rafinare

Client: MIDIA MARINE TERMINAL S.R.L. and Rafinaria Petromidia of S.C. Rompetrol Rafinare S.A, both belonging to the KMG ROMPETROL Int



PRESENTATION OF PROJECTS

Oil Pipelines



PRESENTATION OF PROJECTS

▪ Jet Fuel Pipeline

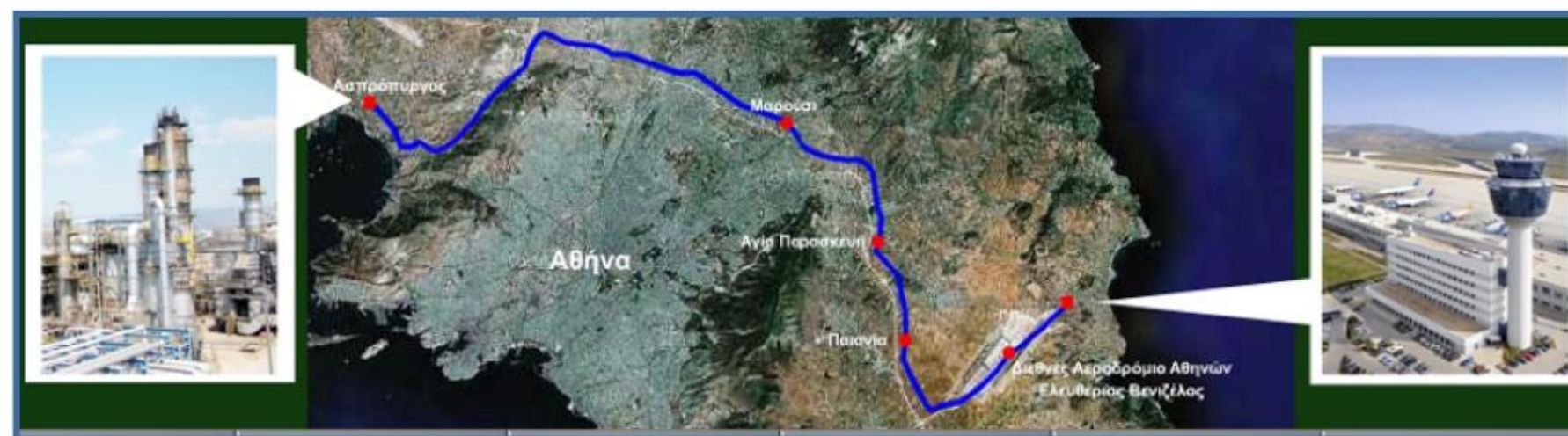
Characteristics: 10" / 51,5 km

Services:

- Project Management
- Basic Design
- Preparation of Specifications
- ITB Preparation
- Management of LSTK contractor & Construction Supervision

Client: OFC Aviation Fuels Services S.A.

Location: Hellenic Petroleum Aspropyrgos Refinery to Athens International Airport



PRESENTATION OF PROJECTS

▪ Thessaloniki – Skopje Crude Oil Pipeline

Characteristics: 16" / 220 km

Services:

- Project Management,
- Follow-up of Basic Design,
- Detailed Design,
- Construction Supervision,
- Commissioning & Start –up of Crude Oil Pipeline and associated Terminal Stations

Client: ELPET VALKANIKI S.A.

Location: Former Yugoslav Republic of Macedonia & Greece



PRESENTATION OF PROJECTS

▪ Burgas – Alexandroupolis Oil Pipeline

Characteristics: 36" / 120 km

Services:

- Routing Design,
- Project Management,
- Authorities & Permits Coordination,
- Environmental Impact Assessment,
- Consulting Services for Basic Design
- Project Control Services



Client: ILF & DEP-Thraki

Location: Alexandroupolis, Thrace, Evros Prefecture, Bulgaria



PRESENTATION OF PROJECTS

▪ Sri Lanka

✓ A1 Transfer Pipeline (2015 - 2017)

Characteristics: 10" / 23 km

Services provided:

- Feasibility study
- FEED
- Budget Estimate
- ITB preparation
- Technical Bid Evaluation
- Project Management

Client: Ceylon Petroleum Corporation



PRESENTATION OF PROJECTS

Natural Gas



PRESENTATION OF PROJECTS

■ Trans Adriatic Pipeline Project



The Trans Adriatic Pipeline is designed to transport natural gas from the Caspian Sea via Greece and Albania and across the Adriatic Sea to Italy. The project is aimed at enhancing security of gas supply as well as diversification of gas supplies for the European markets.

Characteristics: 48" / 770 km

Services:

- Environmental & Social Impact Assessment (ESIA)
- Front End Engineering Design (FEED)
- Permitting Engineering (Greece and Albania)
- Detailed Design

Client: E.ON, Uniper, TAP, ILF

Location: Greece, Albania



TAP Project (1)

Environmental & Social Impact Assessment (ESIA)

- ✓ **Scope of ESIA:** The recognition, identification and assessment of potential *impacts* on the biophysical, socio-economic and cultural environment as a consequence of the development of a project.
- ✓ The study is the framework for controlling and checking the Project so as to minimize or avoid adverse environmental and social impacts through a series of *countermeasures*
- ✓ During construction and operation the treatment is implemented through a number of *management plans*, such as
 - **Cultural Heritage Management Plan**
 - **Restoration & Rehabilitation Plan**
 - **Stakeholders Engagement & Consultation Plan**

Services:

- ☐ Contacts with Stakeholders
- ☐ Collection of primary data, on an unprecedented scale for the Greek standards
 - Abiotic parameters (air, water, soil, landscape) & Biodiversity Studies (flora and fauna - terrestrial and aquatic)
 - Socio-economic parameters (household research, cultural heritage)
- ☐ Special Ecological Evaluations
- ☐ Dispersion Models of Air Pollutants & Noise Diffusion
- ☐ Optical Impact Zone and Photorealistic
- ☐ Public Consultation and Presentation
 - ❖ All services are in accordance with National & International Legislation and the financial performance requirements of EBRD and World Bank (WB)



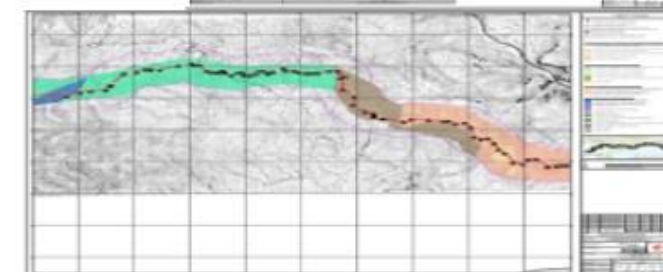
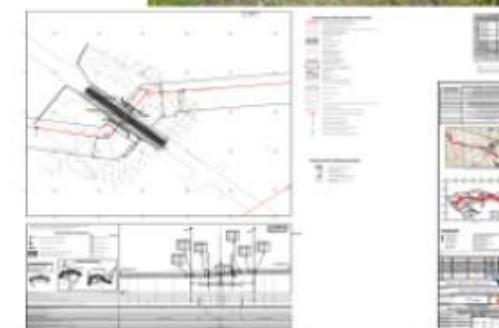
TAP Project (2)

Front End Engineering Design (FEED)

- ✓ **Geological – Geotechnical Investigation**
- ✓ **Topographical Survey** of Block Valve Stations, Compressor Station, Metering Station & TAP Crossings
- ✓ **Hydrological Studies** & proposed protection measures
- ✓ **Route Verification:** Detailed study of various alternative routes combined with on-site visits to the field
- ✓ **Detail Design at TAP Crossings** (Railways, Egnatia Odos and other road network, rivers, points of archaeological interest, other infrastructure networks)
- ✓ **Consultation with Authorities** & submission of relevant files to the relevant Authorities

Services:

- ☐ Preparation and implementation of Geotechnical Program, evaluation of results , Geological Maps & Longitudinal Sections
- ☐ Topographical Diagrams and Topographical Survey Reports
- ☐ Route Technical Assessment and Preparation of Deliverables
 - Pipeline Intersection Points List
 - Pipeline Class Location List
 - Pipeline Crossings List
- ☐ Detailed design Drawings & Technical Descriptions at TAP crossings





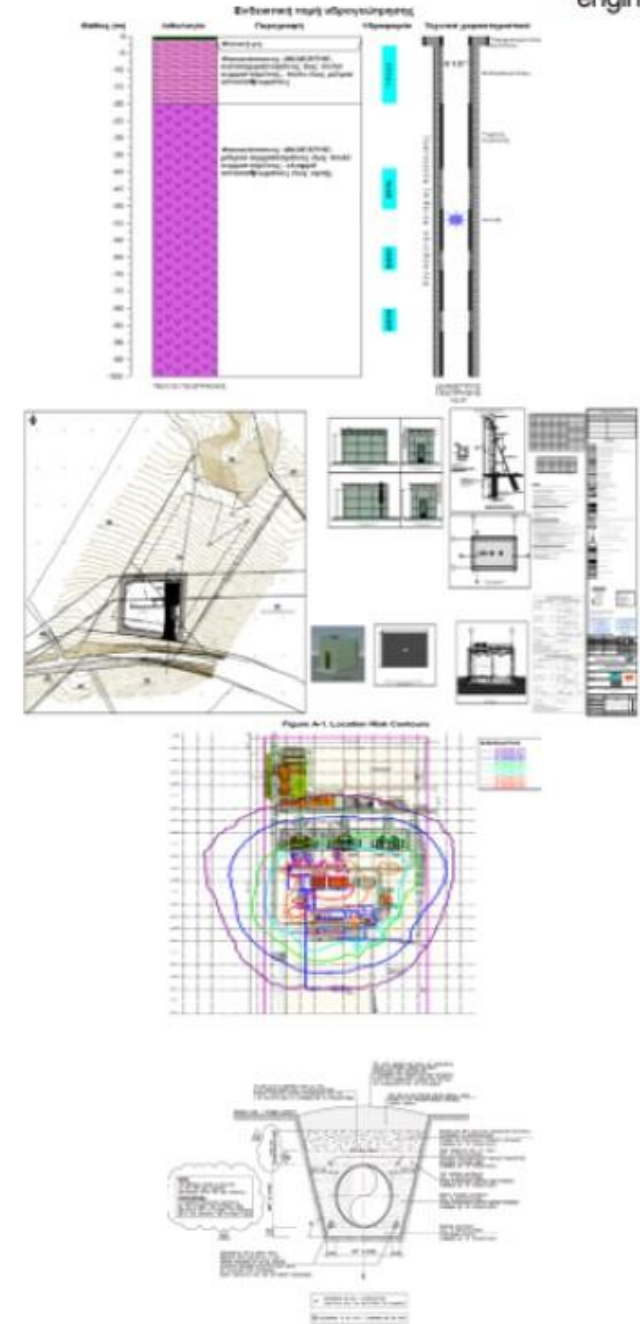
TAP Project (3)

Permitting in Greece and Albania

- ✓ *Route Optimization / Route Description*
- ✓ *Preferred Project Area Permit*
- ✓ *Permits for Trial Pits / Boreholes / Hydroboreholes*
- ✓ *Crossing Permits at TAP crossings with other networks*
- ✓ *Studies of Seismic Risk*
- ✓ *Installation Acts / Installation Permits*
- ✓ *Safety Studies for the Pipeline, the Block Valve Stations & the Compressor Station*
- ✓ *Passive and Fire fighting / Active Studies of Block Valve Stations*
- ✓ *Electromechanical Studies*
- ✓ *Pre-approvals, Building Construction Approvals & Permits for Block Valve Stations*

Services:

- ☐ Topographical Diagrams, Building Coverage Diagrams according to applicable specifications of Legislation
- ☐ Studies of Plant & Vegetative Rehabilitation of Public Forest Areas / Logging Studies & relevant Maps
- ☐ Translation of all documents of Basic Design in Greek for submission to the relevant Authorities
- ☐ Contact / Consultation with Central & Local Authorities to resolve any problems that may arise



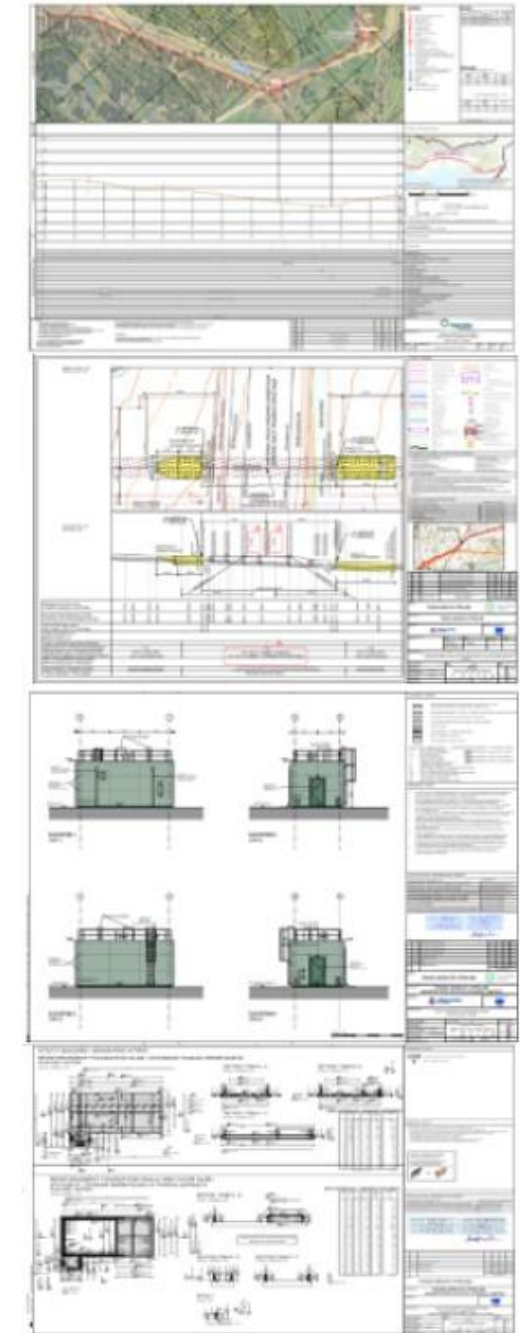


TAP Project (4) Detailed Design in Greece

- ✓ *Pipeline Alignment Sheets*
- ✓ *Hydrological / Hydraulic Studies*
- ✓ *Studies of Geological Risks (Soil liquefaction, landslides, faults, etc.)*
- ✓ *Additional / Supplementary Geotechnical Investigation*
- ✓ *Detailed Design / Construction Drawings at TAP crossings with other infrastructure projects*
- ✓ *Pipeline Cathodic Protection Studies*
- ✓ *Structural studies of Utility Buildings of Block Valve Stations*
- ✓ *Passive and Fire fighting/Active Studies of Utility Buildings of Block Valve Stations*
- ✓ *Electromechanical Studies*
- ✓ *Building Construction Approvals & Building Construction Permits for eight Block Valve Stations in Greece*

Services:

- ☐ Organization / Management of Data Base (UPDM) & Data Input to the Central Data Platform of the Project (TAP-CGI)
- ☐ Production of Material Take Off documents (MTOs)
- ☐ Production of supplementary Project documents (IP Lists, Class Location Lists, etc.)
- ☐ Permitting & Contacts with Authorities



PRESENTATION OF PROJECTS

■ Main National High Pressure Natural Gas Pipeline

Capacity: 36" / 104 km and 30" / 411 km : Total 515 km (including the construction of 32 Scraper and Line Valve Stations)

Services:

- Basic Design
- Detailed Engineering
- Permits Acquisition
- Technical Evaluation of Bids
- Construction Management Services
- Review of Vendor Drawings
- Contract Administration Services
- Services on Quality Matters
- Services on Safety
- Close Out Activities
- Final Documentation packages
- Pipe Log Books



Client: Public Gas Corporation of Greece – DEPA S.A.

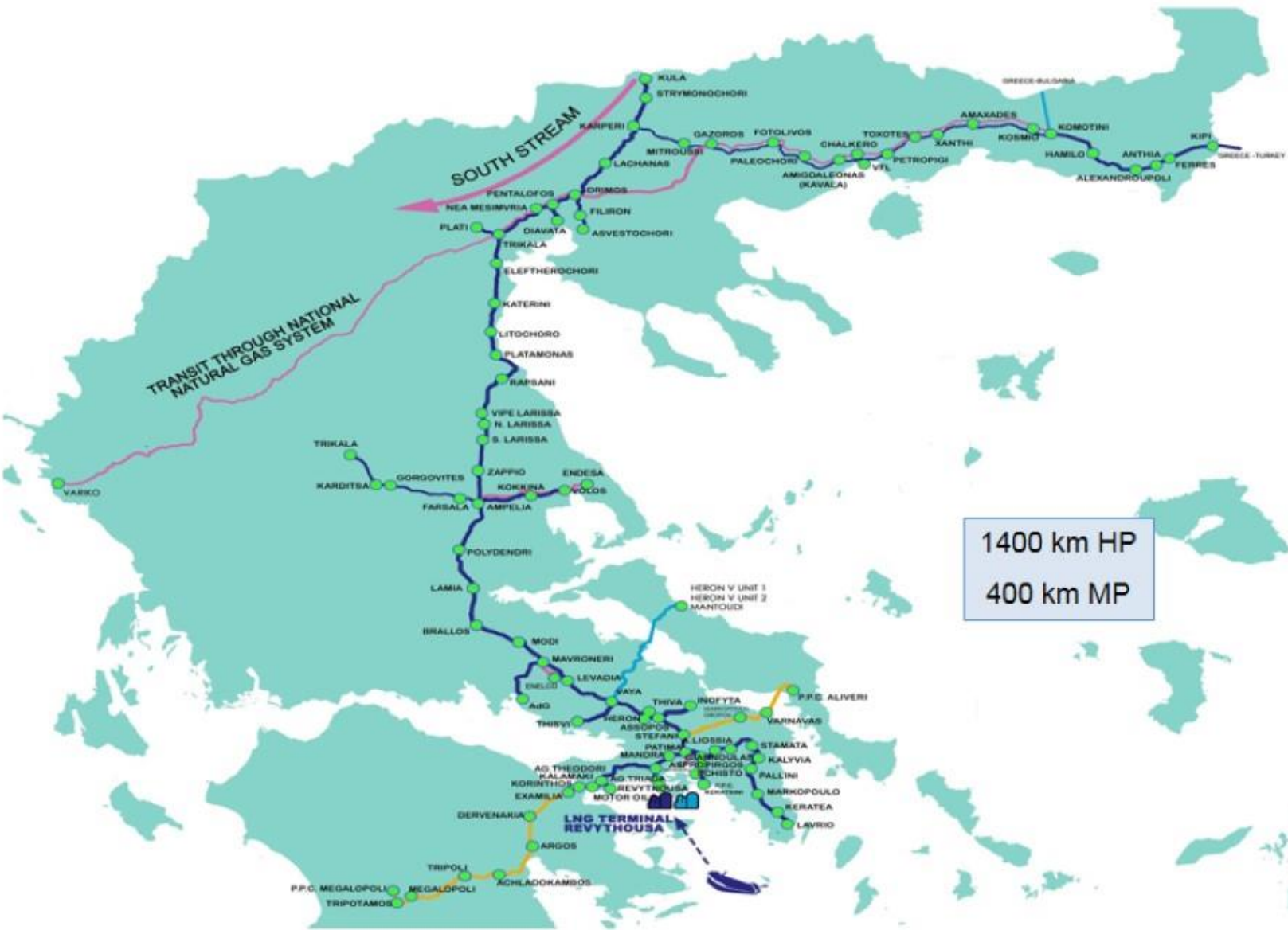
Location: Pipeline routing begins from the Greek-Bulgarian Border and ends in the Attica area.





PRESENTATION OF PROJECTS

- National Gas Transmission System



PRESENTATION OF PROJECTS

■ High Pressure Branchlines

17 Projects of 790km in total ranging from 10 – 36” and from 70 – 150 barg

Services:

- Basic Design
- Detailed Engineering
- Permits Acquisition
- Construction Supervision Services
- Contract Administration Services
- Services on Quality and Safety
- Close Out Activities

Clients:

- Public Gas Corporation of Greece - DEPA S.A.
- Hellenic Gas Transmission System Operator - DESFA S.A.
- GHIZZONI S.A. (Italy)
- IGI Poseidon S.A.



PRESENTATION OF PROJECTS

▪ 42 Metering, Regulating, M/R Stations

Services:

- Basic Design
- Review of Contractor's Detailed Engineering
- Technical Evaluation of Bids
- Construction Management Services
- Contract Administration
- Quality Services
- Safety Services
- Close Out Activities

Clients:

- Public Gas Corporation of Greece - DEPA S.A.
- Hellenic Gas Transmission System Operator - DESFA S.A.

Location: Greece



PRESENTATION OF PROJECTS

■ Medium Pressure Branch Pipeline

11 Projects of 360km of 19 barg each

Services:

- Construction Management Services
- Contract Administration Services
- Services on Quality Matters
- Services on Safety
- Close Out Activities
- Pre- commissioning Site Inspection

Client: Public Gas Corporation of Greece - DEPA S.A.



PRESENTATION OF PROJECTS

■ LNG Terminal at Revithousa Island

Technical Data:

Size: 130.000 m³ LNG storage capacity

3rd Tank Expansion + 95.000 m³

Cogeneration Power Unit: 13 Mwe

Description:

ASPROFOS was engaged in the establishment of the first LNG Terminal in Greece from the very beginning of the project. Specifically for environmental and permit engineering services, ASPROFOS prepared the all the relevant application packages and studies for environmental licensing of all the facilities of the Terminal.

Services:

- Stakeholders Engagement and Permits Acquisition
- Specialized Seismic Studies
- Safety Study
- Environmental Impact Assessments (incl. Initial 2 tanks and expansion, Land reclamation works, Power generation plant, Cumulative Impacts Report for EBRD)
- Wastes Management Study (Liquid and Solid)
- Oceanic Study for Dispersion of Cold Water
- Air Dispersion Model
- Construction Management and Supervision
- Services on Quality Matters
- Close Out Activities
- Final Documentation packages



PRESENTATION OF PROJECTS

■ Malta

- ✓ **Feasibility Study for Connecting Malta to European Gas Network (April 2014-January 2015)**

Services:

- Feasibility Study
- Project Management

Client: Equinox Advisory LTD



- ✓ **Process Design Review for Malta LNG Flare System (February 2015-June 2015)**

Services:

- Basic Design
- Project Management

Client: J&P Avax



PRESENTATION OF PROJECTS

Storage Facilities



PRESENTATION OF PROJECTS

■ New Crude Storage Tanks & Interconnecting

Capacity: 2 Tanks x 80.000 m³

Services:

- Project Management
- Basic Design
- Preparation of Specifications
- ITB Preparation
- Management of LSTK Contractor
- Construction Supervision

Client: Hellenic Petroleum Thessaloniki Refinery

Location: Thessaloniki



PRESENTATION OF PROJECTS

■ Vasilikos Tank Terminal Project (Cyprus)

Characteristics: 40 Tanks / Final Total Capacity of 858,000 m³

Services:

- FEED Services
- Detailed Engineering Review
- Cost Estimation Services

Client: VTTI / VTT Vasilikos

Location: Vasilikos, Cyprus



PRESENTATION OF PROJECTS

▪ Tank Farm Design

Description:

- The project involved the construction of a ship-fed Tank Farm in Durres, which included 15,000 m³ of storage tanks for white petroleum products, an office building and a track loading installation.

Services:

- Project Management
- Basic Design
- Detailed Engineering
- Construction Supervision

Location: Albania



PRESENTATION OF PROJECTS

■ Cyprus (EKO)

Relocation of existing EKO storage facilities from Larnaca to Vassiliko

Characteristics: 15 Tanks (various oil products) / Final Total Capacity of 52,500 m³

Services:

- Plant Conceptual design
- Area Plot plan
- Main Equipment layout
- Land area verification
- Excavation & Site Development layout
- Environmental & Social Impacts Assessment
- Sevezo-III study
- Permitting
- Cost Estimation
- EPC planning
- Client's Management support

Client: HELPE CYPRUS

Location: Vasilikos, Cyprus



PRESENTATION OF PROJECTS

■ Cyprus (BPEM)

Relocation of existing BP storage facilities from Larnaca to Vasiliko

Characteristics: 4 Tanks / Final Total Capacity of 28,000 m³

Services:

- Plant Conceptual design
- Area Plot plan
- Main Equipment layout
- Land area verification
- Excavation & Site Development layout
- Environmental & Social Impacts Assessment
- Sevezo-III study
- Permitting
- Cost Estimation
- EPC planning
- Client's Management support

Client: BP Eastern Mediterranean (BPEM)

Location: Vasilikos, Cyprus



PRESENTATION OF PROJECTS

▪ Sri Lanka (CEYPETCO)

Development of a New Tank Farm at Muthurajawela site

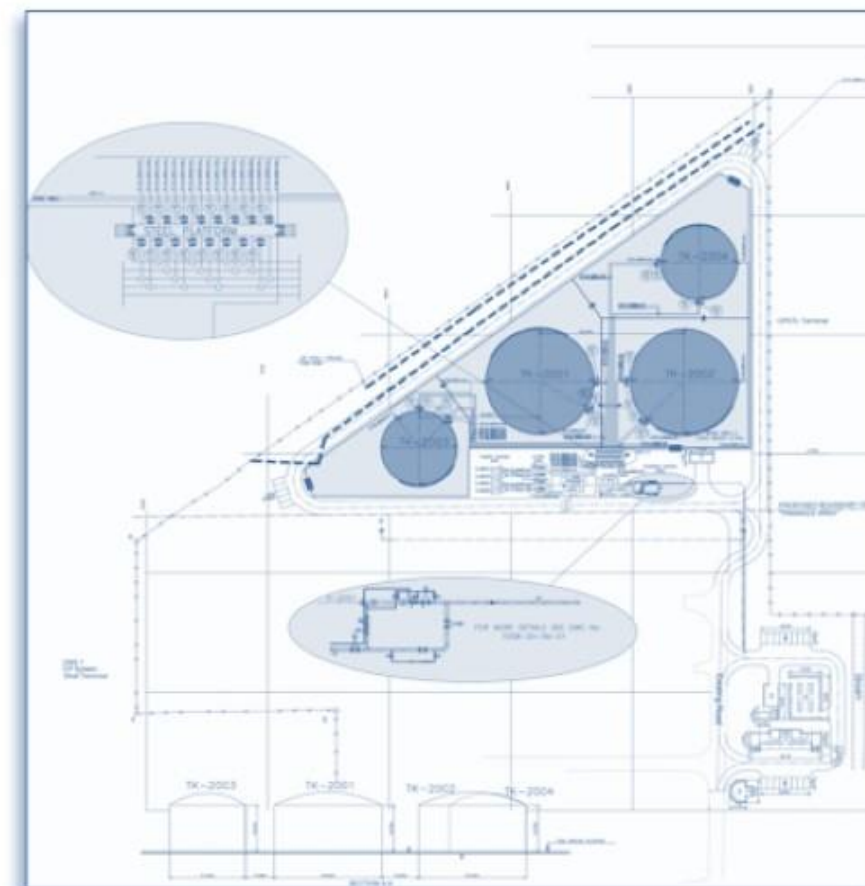
Characteristics: 4 Jet-A1 Tanks / Final Total Capacity of 95,000 m³

Services:

- Pre-Feasibility Study
- Final Feasibility Study
- Basic design and FEED studies
- Area design & Site development
- Main Equipment & Piping design
- Environmental & Social Impacts Assessment
- Basic Material selection
- Environmental Risk Analysis
- Geotechnical/Topographical survey
- Permitting
- Cost Estimation
- EPC planning
- ITB Technical Package
- ITB Commercial Package
- Client's Management support

Client: Ceylon Petroleum Corporation (CEYPETCO)

Location: Muthurajawela, Sri Lanka



PRESENTATION OF PROJECTS

■ PLOCE Tank Terminal Project (CROATIA)

Characteristics:

12 Tanks for Clean Petroleum Products (CPP) + 5 Bullets (Fame)

Final Total Capacity of 300,000 m³

Services:

- FEED Services

Owner: VTTI

Location: Ploce, Croatia





Consultancy Services

PRESENTATION OF PROJECTS

■ Cyprus

✓ Organization Study of TSO Cyprus (August 2005 -September 2006)

Services:

- Project Management,
- Consulting and Marketing

Client: Transmission System Operator - Cyprus



✓ Reengineering of EAC, Organization Improvements and Technical Consultancy Support Services (January 2006 – July 2012)

Services:

- Organizational Structure Study – re-engineering
- Project Management
- Economical / Technical Consultancy

Client: Electricity Authority of Cyprus (EAC)



PRESENTATION OF PROJECTS

■ Cyprus

- ✓ **Technical, Economical Consultancy Services, EAC's Preliminary Tariffs Study, Review Examination & Analysis of EAC's Tariffs (October 2004 – March 2007)**

Services:

- Technical / Economical Consultancy
- Project Management

Client: Cyprus Energy Regulatory Authority



PRESENTATION OF PROJECTS

Service:
Bid Support to EPC Contractors

- ✓ **Technical Support for offer preparation in Ain Sokhna, Egypt (May 2014)**

Client: Archirodon

- ✓ **Engineering Services for Tendering Purpose, Ma'aden, Saudi Arabia (November 2013)**

Client: J&P Overseas





Power Plants

PRESENTATION OF PROJECTS

■ Combined Cycle Power Plant

Capacity: 390 MW

Services:

- Project Management
- Contractor's Engineering Follow-up
- Construction Supervision
- Environmental Impact Assessment
- Basic Design of surrounding installations
- Permit Engineering for Installation and Operation

Client: Thessaloniki Energy – ELPEDISON

Location: Thessaloniki, Greece



PRESENTATION OF PROJECTS

■ Combined Cycle Power Plant

Capacity: 400 MW



Services:

- Preparation for Power Generation Permit
- Site Preparation Study for installation
- Environmental Impact Study

Client: Public Gas Corporation –DEPA S.A.

Location: Revithoussa, Greece



PRESENTATION OF PROJECTS

■ Power Production Units on the Greek Islands

- Power:
- 18.7 MWe on Andros
 - 4.2 MWe on Astipalea
 - 16 MWe on Ikaria
 - 10 MWe on Symi
 - 8 MWe on Skyros

Services Provided:

- Installation License
- Operation License
- ESIA
- Revised Environmental Conditions
- Air dispersion Model
- Sound propagation Model
- Waste Management Study (Solid & Liquid)

Client: PPC Greece



Gas Stations



OTHER PROJECTS

- Automobile Service Stations



Description:

The project included Detail Engineering, Procurement, Construction and put in operation of two Automobile Service Stations (ASS I & II) on both sides of the National Road Chalastra – Evzoni, at 42 Km. mark from Chalastra Interchange, at Polykastro, Kilkis.

The two stations each contain a Gas Station and Snack Bar (Building 1), an Automobile washing – greasing / lubricating station (Building 2) and a Power Generation Substation – PPC (Building 3), as well as a Biological Treatment Unit.

Services: EPC

OTHER PROJECTS

■ Permits and Other Services to Retail Gas Stations (Greece)

Description:

- The scope of work is to examine the certificates and the permits of specific retail gas stations of EKO ABEE and to make the required modifications in order to comply with the new Greek legislation.

Services

- Compliance with the new Greek Law 4439/2016
- Technical Specifications of Equipment
- Verification and Update of Existing Certificates
- Studies for installing LPG to gas stations
- Conversion of Single Service Retail Gas Stations to Dual Service (Gas and CNG)
- Traffic Connection Studies
- Modifications for Car Wash & Lubricant Facilities
- ATEX Studies & Diagrams
- Verification of Stations' Sustainability
- Planning Arrangements
- Topographical Surveys



Other Experience



OTHER PROJECTS

▪ Light Railway System (TRAM) for Greater Athens Area



Description:

The project involves the construction of two lines of Light Railway System with total length of approximately 24 kilometers, 48 stations, as well as the linking line with the wagon-shed having a total length of about 2.2 kilometers.

The project included Civil Engineering Works, Procurement, Installation and Commissioning/Start-up of the Electromechanical Systems regarding the Light Railway System. The vehicular material comprised 35 wagons, foremost, and the procurement, construction and operation of the machines and tools, Reconstruction, expansion of the existing and construction of new buildings in Hellinikon for the making of the wagon-shed will take place.

Services:

Project Management, Project Control Services, Construction Supervision Services, Contractor Follow-up, Cost Estimation, Issue of Technical Bid Packages

OTHER PROJECTS

■ Eleusis 2021

Description:

- The project involves the restoration and renovation of selected buildings in cultural areas due to Eleusis 2021 European Capital of Culture. It includes the “IRIS” and “KANELOPOULOU” buildings, the Administration Building of the former oil mill, etc.

Services:

- Architectural Studies
- Load Baring Structure Rehabilitation & Reinforcement Structural Studies
- Electromechanical Studies (Lighting, Rainwater Drainage etc.)
- Special Studies (Special lighting, Installation of Theatrical Stage, Acoustics etc.)
- Accompanying Studies (Thermal insulation, Passive Fire Protection, Energy Efficiency, Health & Safety Plan - Health & Safety Folder etc.)
- Landscaping Studies
- Preparation Tender Documents
- Permitting



OTHER PROJECTS

▪ Nestle

Description:

- Construction of a new steel facility for coffee storage equipment, consisted of ground floor and four floors for NESTLE in the 61st km of Athens-Lamia in Oinofyta.

Services:

- Topographical Surveys
- Building Location Optimization
- Architectural Study
- Structural Study
- Mechanical Study
- Electrical Study
- Natural Gas and Other Utilities Supply Study
- Permitting
- Management & Construction Supervision



OTHER PROJECTS

▪ KEDAK

Description:

- The KEDAK Mobile Groups are mobile teams checking the distribution & storage of Fuels, all over the country, taking samples in situ from storage installations, transportation trucks & Petrol Stations.
- The KEDAK Groups use special VANS, that give them the ability to analyze and produce the checking results locally.
- The whole system is connected with the main servers in KEDAK Headquarters.

Services:

- EPC
- Hardware / Software



OTHER PROJECTS

■ ATHENS 2004



ATHENS 2004



Αθηνά Φοίβος



Services:

- Technical Consultant to the General Secretariat of the Olympic Games
- Program Management of the “Olympic Preparation” Project during the “Athens 2004” Olympic Games in Greece



THANK YOU FOR YOUR ATTENTION

For more information about ASPROFOS Engineering S.A.,
Please visit our website: www.asprofos.gr

or

Contact us at: El. Venizelou 284, Kallithea, Athens
Tel.: +30 210 9491600



MEMBER OF THE GROUP

