

The background of the entire page is a composite image. It features an industrial facility with tall distillation columns and towers, likely a refinery or chemical plant. Overlaid on this is a close-up of a man's face, looking towards the camera with a slight smile. The image is heavily stylized with dynamic, colorful motion blur streaks in shades of blue, yellow, and red, creating a sense of speed and energy. Large, abstract geometric shapes in dark blue and red are layered over the top and bottom of the image.

Designer &
Integrator
of Solutions
in the **Energy
and Process
businesses**

The logo for MK Energies, featuring a stylized 'M' and 'K' in blue and red, followed by the word 'Energies' in blue.

MK Energies
www.mk-energies.fr

Our vision & ambition MK Energies

Our vision is to be **a major player in the design and integration of new technologies in the energy and industrial processes sectors** to support our customers in their digital transformation and energy transition.

Our values are trust and honesty, an entrepreneurial spirit based on sharing success and, above all, a sense of ethics.

Our ambition is to work alongside our customers, integrating their industrial processes, designing and optimising their infrastructures, across all energy technologies.

Today, our business activities and expertise are well known and recognised, particularly in electrical engineering, automation and information processing, and it is with this same ambition that MK Energies designs and implements high added-value global solutions that meet its customers' performance, reliability and safety requirements."

Jack and Johan Manka

Our strategy

CUSTOMER PROXIMITY

Over the years, MK Energies has established itself in **various strategic areas to cover the regional industrial fabric**, enabling our teams to become even closer to their customers, providing a more responsive and dynamic **quality of service**. Today, with its **12 locations** in Arras, Cernay-lès-Reims, Dieppe, Dunkerque, Evreux, Lille, Saint-Dizier, Saint-Léonard, Saint-Quentin, Valenciennes, Vervins and Italy, MK Energies broadly covers the whole of northern France.

A MIX OF REGIONAL OFFERINGS AND EXPERTISE

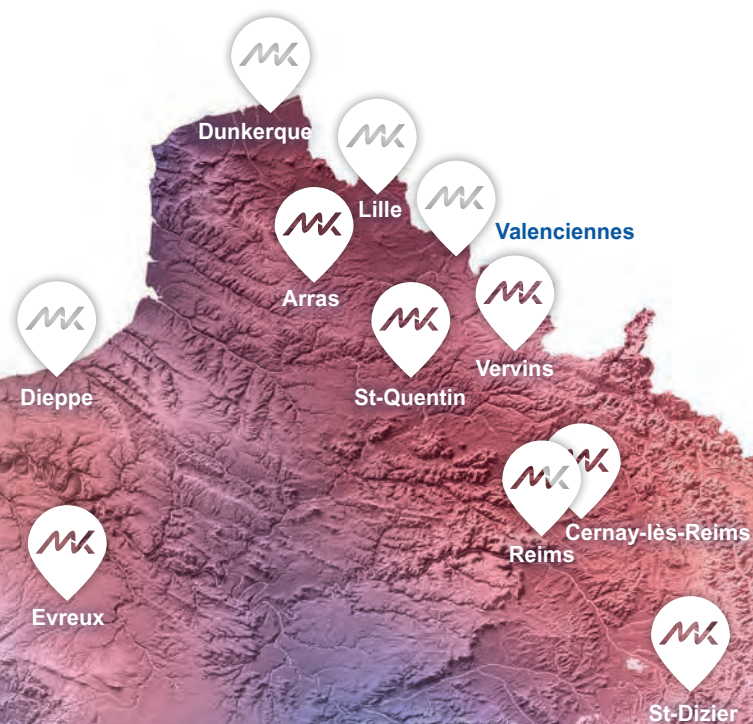
Agile and responsive, **MK Energies branches work as part of a network**, ideally located close to their customers' industrial production sites. Its mix of **regional offerings and expertise means that MK Energies can produce innovative, relevant and customised solutions** to meet the specific needs of each customer.

SHARING BEST PRACTICE

Its market-proven expertise means that MK Energies can capitalise on multidisciplinary and multi-sector feedback to learn from and share tried and tested methods and best practice. Its teams act accordingly **with rigour and professionalism at every stage of a project**: management, study, design, purchasing and implementation.



MK Energies at a glance!



Our certifications



Since 2015, MK Energies has been certified MASE, a system for managing health, safety and the environment



Bronze
ecoVadis
certification



MGTI.5 - Moyen Gros Tertiaire Industrie Class 5 (Middle Management in Industrial and Service Sectors):
from 50 to 250 operatives
AUT - Automation option
ET - Study and Design option
Qualif. code: MGTI.5 AUT ET



PIRVE2: Electric
Vehicle Charging
Infrastructure
Level 2 Training

☆☆ **12** ☆☆
years in
operation

€45 million
turnover

200
employees



12
locations

1,500
completed
projects

Our Local Expertise



Integration of solutions

- Turnkey MV, LV, automatism and instrumentation
- Controlling your environment

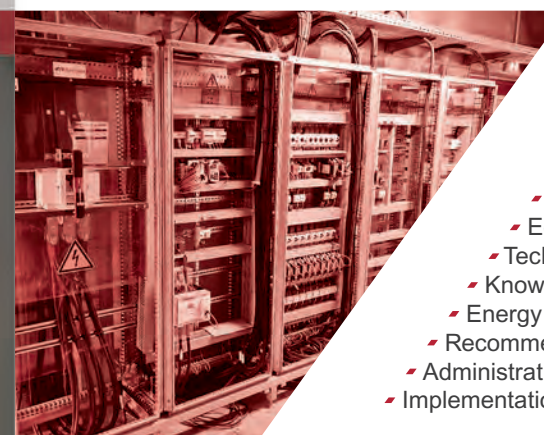
MV/LV distribution

- Turnkey
- Customer support
- Design, consultancy, modelling and integration of MV/LV technical solutions
- Calculations and dimensioning
- Changing neutral systems IT > TN
 - Adaptation to space and reuse constraints
 - Implementation and commissioning
- Manufacture of MV accessories and dielectric testing
- All-brand expertise (Siemens, Schneider, Ormazabal)
- Substation rewamping (rapid interventions)



Support for your projects

- Assistance in organising technical shutdowns
- Equipment renewal plans and budgets
- Technical advice and functional analyses
- Knowledge of your processes for optimum support
- Energy Savings Certificates (C2E)
- Recommendations and eligibility detection
- Administrative support
- Implementation



Before After



Refurbishment of PLC cabinets

- Surveys of existing equipment (with or without drawings)
- Electrical or Autocad drawings
- On-site cabling
- Wire-to-wire testing of equipment

Processes

- Turnkey
- Assistance with functional analysis and engineering
- Definition and implementation of ASI, Profibus, Profinet and fibre optic networks
- Choice of equipment within/outside ATEX areas
- Design and renovation of process workshops (control-command and automation)
- Communicating motor starters
- Pneumatic systems and tubing
- Design of complete workshops: automation, instrumentation, speed variation
- Renovation of process lines
- Revamping of control-command cabinets, PLCs and HMIs



Our Local Expertise

Responsiveness & availability

- Management of business assets
- Versatility of trained local teams (accreditation, SST, etc.)
- Reactivity, flexibility and proximity in safety with qualified personnel
- Solutions offered with control of suppliers and partners
- Replacement of sensors, relocation of motors, modifications to control cabinets
- On-call duty and additional electrical and instrumentation personnel
- Day-to-day support: MV, LV, automation...
- Mastery of industrial constraints (safety, operating procedures, etc.)

Networks & safety

- Access control and video surveillance
- Integration of fire safety systems (Siemens, Chubb, Def)
- Definition of IT racks
- Fibre and copper cabling and acceptance testing
- Organisation and planning of operations
- Secure, redundant power supply for data centres

Knowledge & control of your environment (SEVESO)

- Work on SEVESO sites, supply areas, ATEX with level 1 or 2 qualified personnel
- ATEX design and implementation know-how
- Stainless steel instrumentation and tubing
- QES procedures are in our DNA, concurrent work

Maintenance services

- Audits and measurements (capacitor banks, insulation fault detection, etc.)
- Maintenance of MV/LV substations
- MV/LV maintenance levels 1 to 4
- Testing LV circuit breakers
- Oil analysis
- Lighting contracts and equipment management

Contract for electrical work

- Day-to-day management of the work
- Process wiring modification
- ATEX instrumentation
- Breakdown and repair service
- Lighting (equipment monitoring)
- Search for insulation faults

Electric vehicles

- Advice on the installation of recharging stations in industrial environments
- On-site integration (power supply, protection, personal safety)
- Configuration and commissioning

MK Energies **business activities**

Electrical engineering

Consulting & engineering

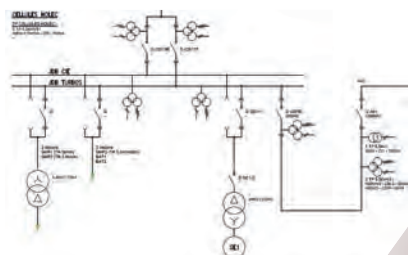
- Master plans and general orientation
- Availability of facilities
- Technical advice, cells, LV neutral system...
- General audit of facilities
- Analysis of malfunctions

Studies & design

- Functional analysis and redundancy
- Study and control of selectivity
- Stability studies
- IEC61850 communication
- Arcflash study
- Equipment definition and layout



CANECOTCC
CANECOHT



Connected LV distribution

- Definition as per IEC61439
- Arcflash detection
- MID and ISO50001 energy metering
- Intelligent motor starters (Simocode, etc.)

Training & improving customer skills

- Start-up assistance
- Cell operation
- Operating protection relays
- Management and operation of generating plants
- Customised training

Electricity production

- Synchronisation and coupling cabinets
- Machine excitation and control cabinets
- Load sharing (coupled and islanded)
- Decoupling protection and Operational Information Exchange System

Monitoring and control of HV/MV substations

- Overall design of units
 - General
 - Electricity Transport Network input
 - HV/MV transformer
- Suggested improvement (differential protection)
- Configuration of voltage regulators



MK Energies **business activities**

Electrical engineering

Implementation

- Installation of MV cells
- Manufacture of MV connectors
- IEC61850 and MODBUS network integration on site
- Feedback to plant supervisor

SIEMENS

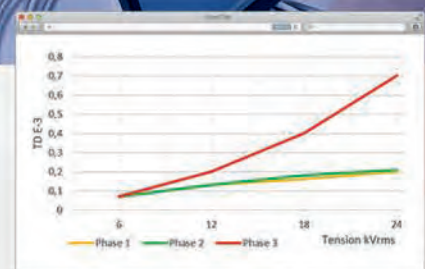
Siemens NX
PLUS C cell
fitter

Measurements & diagnostics

- LV and MV loads and harmonics
 - Choice of compensation solution
 - Active and passive filtering
- Appraisal of MV cables (delta tangent)
- Diagnostics for transformers and rotating machines
 - Delta tangent
 - Partial discharges
 - Sweep Frequency (SFRA)

Tests

- Checks before the inspection body (earth, circuit-breaker settings, etc.)
- Configuration and testing of all makes of protection relays
- Qualification of protection plans by actual testing
- VLF dielectric tests



Maintenance levels 1 to 4

- MV cell maintenance
- MV/LV and HV/MV transformers
- Maintenance and testing of LV circuit breakers
- HV equipment

MK Energies **business activities**

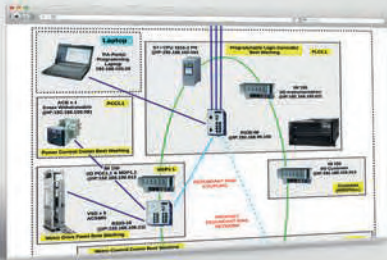
Automation & processes

Consulting & engineering

- Definition of solutions according to process requirements:
 - Choice of manufacturers
 - Redundancy
 - Network topology
- Obsolescence audit
- Functional analysis
- Creation of development standards

Studies & design

- Functional analysis
- Definition and choice of equipment
- PLC and supervision development
- Drafting the operator manual
- Test procedures (FAT, SAT)



Renovation of systems

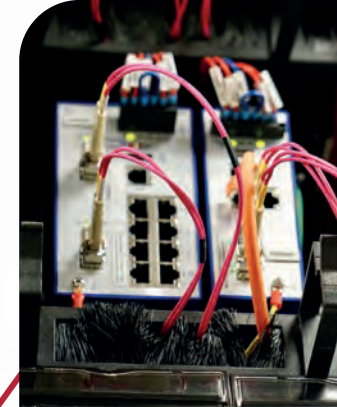
- Audit of facilities
- Exhaustive surveys of existing facilities
- Reverse engineering and intervention on obsolete PLCs
- Architecture optimisation
- Provision of new functionalities
- Replacing systems without stopping production
- Switchover planning and fallback procedures

Multi-system developments



Networks & systems

- Network, systems and security audit
- System and network supervision
- Virtualisation and backup solutions
- Business continuity and recovery
- Cyber security solutions
- Remote connection and remote maintenance



Connected industrial objects

- Object definition and integration (energy metering, temperature, on/off information)
- Wireless network coverage audit
- Network deployment
- Installation and configuration, server, antennas
- Dashboarding and visualisation



MK Energies **business activities**

Automation & processes

Instrumentation & acquisition

- Control loops
- Design of acquisition chains
- Position acquisition and optical encoders
- Choice of ATEX equipment
- Calculation of intrinsic safety loops



Weighing systems

- Equipment definition
- Turnkey scales and retrofits (mechanics, sensors, acquisition, processing)
- Static and dynamic weighing
- Processing in the PLC (jump errors, setting, etc.)
- Calibration of scales



Process & machine safety

- Definition of architecture and hardware (SIL level, etc.)
 - Self-control relay
 - Automatic safety systems
- Analysis of security functions
- Validation of HGV safety levels (SISTEMA)
- Development
- Monitoring and logging



Testing & commissioning

- Platform creation (FAT)
- Test procedures
- Wire-to-wire tests
- Instrument calibration
- Validation of sequences

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2	Test 2	Tag 2	Comments	Comments	Pass	Fail	Not	OK	NA
3	Test 3	Tag 3	Comments	Comments	Pass	Fail	Not	OK	NA
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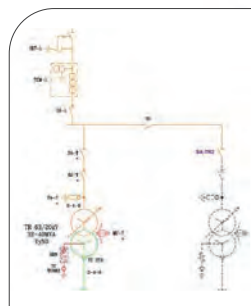


Some of our achievements

Plant power supply

Biofuels

- Construction of a new HV substation to supply the plant with 40 MVA power via 2 redundant transformer bays
- Project content:
 - Civil engineering
 - HV part
 - MV part
 - Integration into the factory network



Renovation of HV/LV sections

Food industry

- Renovation of 2 x 63/20 kV 36 MVA transformer units
 - Differential protection
 - Voltage regulation
 - IEC61850 supervision



Replacement HV transformer

Paper

- Replacement of a 90 kV/20 kV 25 MVA transformer
 - Replacement of the transformer and switch from 15 kV to 20 kV
 - Integration of 20 kV cells
 - Installation of transformer differential protection
 - Modification of the settings of other transformers following the switch from 15 to 20 kV
 - Replacing connections
 - Testing and commissioning



HV/MV substation maintenance

Biofuels

- Drawing up a maintenance plan
- Maintenance of 63 kV equipment
- Diagnosis of 63 kV transformers
- On-load tap changer maintenance
- Protection relay tests
- Diagnosis of MV cables



High availability MV/LV distribution

Pharmaceutical glass

- 3 Enedis 20 kV inputs
- 2 x 1600 kVA/20 kV generators
- 7 MV substations, 65 cells
- 7 HV/LV distribution transformers
- 6 heating transformers
- 65 SEPAM communicating IEC61850 protocol



MV/LV backup

Airport

- Turnkey installation of 2 MV/LV substations to replace generator sets
- Studies and design according to standards
- Nocturnal testing and switching



Cogeneration plant

Energy recovery

- Construction of an incineration unit generating 7.2 MW of electricity fed into the Enedis network
- Supply and installation of the MV panel
- MV/LV design and studies
- Worksite implementation
- Programming the protection relays
- Dielectric testing of HV links
- Testing and commissioning



Food industry

- Turnkey construction of a 10 MW cogeneration unit for injection into the Enedis network and steam resale
- MV cogeneration panel
- NFC 15400 and C 13100 protection



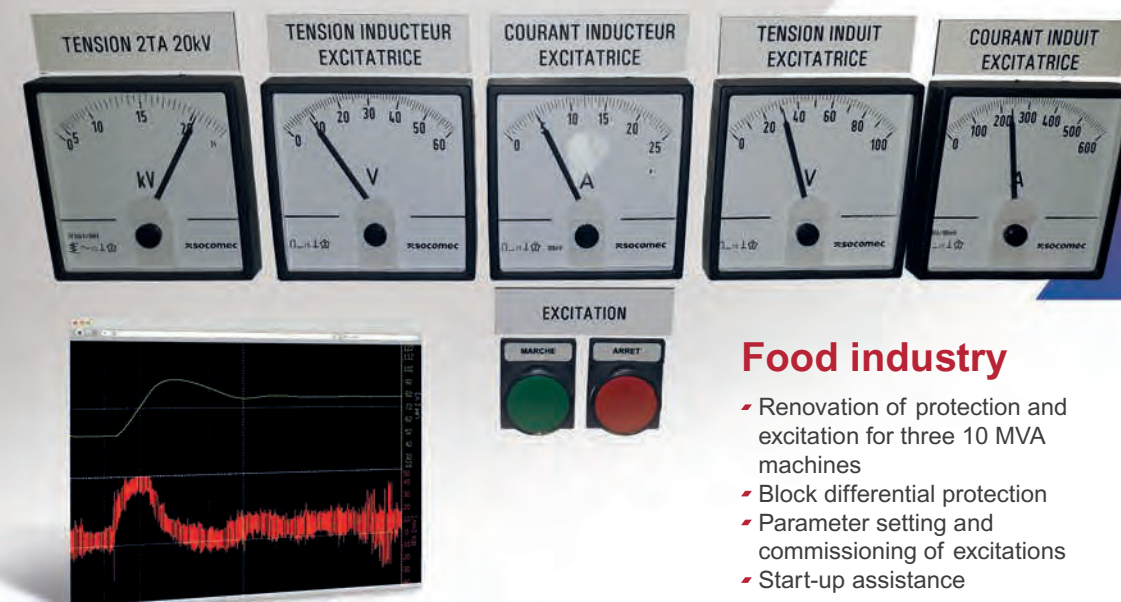
Integration of turbo-generators

Food industry

- Supply and integration of a 20 MW turbo-alternator and HV and LV electrical distribution
- 54 MV cells
- 13 LVMDP



Regulation and control of turbo-alternators



Food industry

- Renovation of protection and excitation for three 10 MVA machines
- Block differential protection
- Parameter setting and commissioning of excitations
- Start-up assistance

Morocco

- Integration of a 4th turbo-alternator and increase from 5.5 kV to 22 kV
- Pre-study and technical advice
- Control and regulation cabinet for the power station
- Testing and commissioning



Ivory Coast

- Control of 3 machines
- Voltage and frequency regulation
- Load sharing
- Process pressure regulation
- Synchronisation and coupling



Delivery substation replacement

Food industry

- Installation of a Schneider RM6 watertight substation
- Replacement of a transformer and the main LVMDP
- Testing and commissioning

Chemistry

- Replacement of a Vercors substation with a Siemens watertight solution
- Loop feeders, general protection, 4 transformer feeders



Cement

- Replacement of 20 KV and 5.5 KV MV cells
 - Day 1: removal/reinstallation
 - Day 2: power connection
 - Day 3: connecting controls, housing
 - Day 4: testing/commissioning
 - Day 5: acceptance by the inspection office (Approval Without Comment)



Replacement of LVMDP and MCCs

Glass

- Replacement of 2 1600 kVA LVMDP
- Service index 333
- Bar ducts
- Changing neutral systems (IT > IN)
- Reagent compensation



Airport

- Replacement of 2 1000 kVA transformers and LVMDP
- LVMDP 3200 A form 4b, service index 333
 - 2000 A bar ducts
- 2 inlets, 1 coupling, 50 outlets



Health

- Renovation of LVMDP following an increase in transformer power
- On-site surveys and choice of equipment
- Replacement of the LVMDP in a weekend



Testing, commissioning & maintenance

Commissioning of a delivery substation

Wind

- ▀ Setting the protection relays
- ▀ Support to Enedis for testing
- ▀ Operational Information Exchange System: information feedback tests
- ▀ Dielectric testing of HV and delta tangent links
- ▀ Detailed commissioning report



NF C 13-100 relay revamping and generator protection

Hydropower

- ▀ Definition of SEPAM S48 E23 and G40 protection relays
- ▀ Transfer of existing settings and diagrams
- ▀ Integration into 80's chassis
- ▀ Supervision feedback (MODBUS TCP)
- ▀ Testing and commissioning



MV/LV maintenance on SEVESO sites

Food industry

- ▀ Oil sampling on 9 MV/LV transformers
- ▀ Maintenance levels 1 to 4
 - ▀ 13 MV circuit breakers
 - ▀ 8 HV fuse links
 - ▀ 2 MV switches and 1 primary voltage cell
 - ▀ 40 LV circuit breakers with control unit tests
- ▀ Testing 21 protection relays
- ▀ Replacing MV fuses
- ▀ Replacement of 2 MX coils following maintenance



Diagnosis of a 12.5 MVA block assembly in a power plant

Food industry

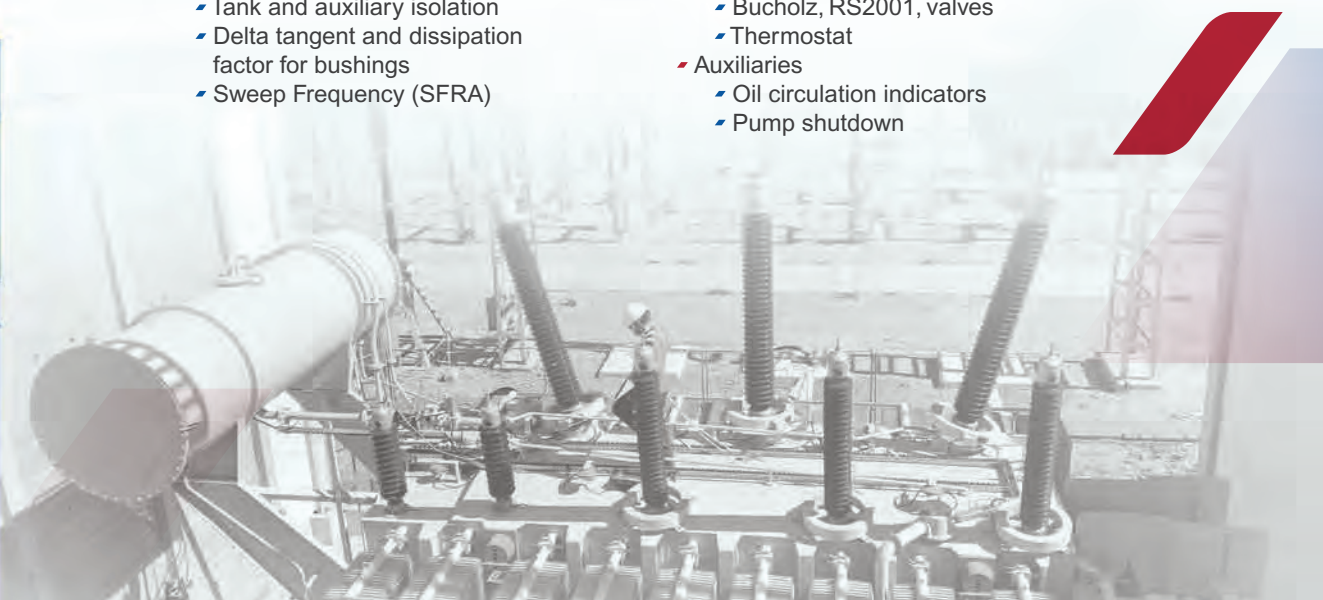
- ▀ 5.5 kV alternator and rotating diode exciter
 - ▀ Polarisation index
 - ▀ Delta tangent
 - ▀ Partial discharges
- ▀ 5.5 kV/20 kV transformer
 - ▀ Transformer ratio, short-circuit impedance
 - ▀ SFRA
- ▀ Delta tangent measurement on MV cables



170 MVA transformer commissioning

Transmission network, for a manufacturer

- ▀ Initial transformer measurements
 - ▀ Tank and auxiliary isolation
 - ▀ Delta tangent and dissipation factor for bushings
 - ▀ Sweep Frequency (SFRA)
- ▀ Transformer safety tests
 - ▀ Bucholz, RS2001, valves
 - ▀ Thermostat
- ▀ Auxiliaries
 - ▀ Oil circulation indicators
 - ▀ Pump shutdown



Seamless renovation of a material preparation workshop

Glass

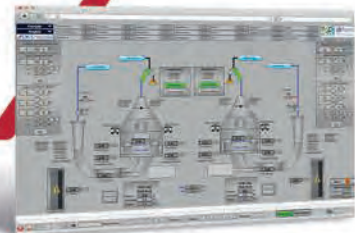
- 150 motors, 22 products, 8 static scales, 3 dosing belts
- TIA Portal V15.1
- WinCC pro supervision with operator order traceability
- PC and industrial tablet access on Webnavigator thin client
- GSM alarm reporting (OPC server)
- Dynamic and static weighing (SIWAREX/SCAIME weighing cards and encoder)
- Revenue management
- Self-healing Profinet ring (MRP)
- Redundant Hirschmann supervision ring (MRP)



Construction of a grinding plant for a pellet factory

Energy and the environment

- TIA Portal V15.1 and WinCC pro supervision
- 70 smart motor starters (Simocode, ABB drives)
- 350 instruments
- Level and intensity control of grinding motors
- Preventive maintenance report
- Workshop energy management



Control of a winding bench

Metallurgy

- Control of steel wire winding with torque limitation
- Wire positioning by hydraulic cylinder with proportional distributor
- Drives using Profinet-controlled DC drives
- Siemens S7-1500TF safety controller
- Renovation of the HMI



Control-command of a new biomass feedstock unit

Energy

- Creation of a new architecture with
 - 1 S7-400 PLC running PCS7 V9.0 SP3
 - ET200Sp remote inputs/outputs
 - Communicating motor starters
- Use of the standard APL library
- Regulation of silo extractions
- Communication with weighing systems

Control-command of compressor equipment

Cement

- Management of 7 ALTAS COPCO compressors
- Balancing running times
- Timing of start-ups
- Building air temperature control
- Integration of an S7-417 PLC in the PCS7 V8.1 multiproject client
- CANopen communication



Replacement and supervision of general plant protection 50 MW

Glass

- PCS7 V5.0 under Windows NT
- Equipment definition and programming
- GSD integration for new PROFIBUS exchanges
- Communication with factory load shedding and back-up system
- Response protocol and fallback in the event of failure
- Virtualisation and platform testing



Truck loading unit, driver identification, traceability

Cement

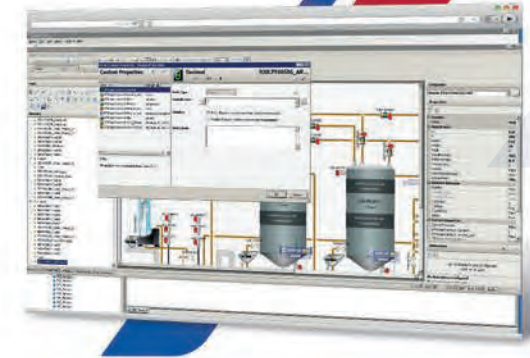
- Addition of M340, M540 and M580 PLCs and CITECT client under PES
- Hardware and network configuration statement
- Programming truck loading lines
- Creating views in CITECT and animation
- Communication with PRECIA weighing system
- Driver identification and traceability on customer ERP



Installing a Galaxy on a new unit

Biofuels

- AVEVA System Platform
- Galaxy connected to another site for real-time replication of historical data
- Creation of Global Objects specific to each type of equipment (standardisation)
- Deployment on supervision workstations
- Connection to different PLC ranges (M340, S7-400)
- Ergonomic animation
- Energy management by daily report



Schneider Unity

Control-command of a new composition and loading workshop

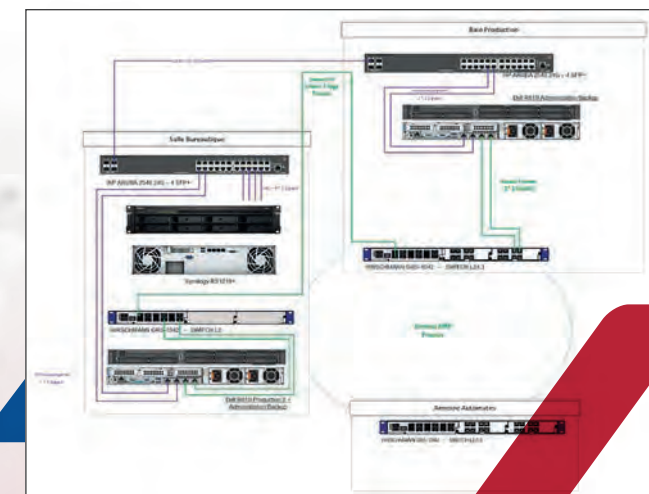
Glass

- Upgrading existing systems (Concept to Unity)
- Creation of factory programming guidelines (blocks and faceplates)
- M340 PLC, Unity development, Vijeo and RSView supervision (Rockwell)
- Weighing dynamics in the PLC, acquisition via MS100 weighing DNA electronics
- Batch management and oven calls
- Regulation of the material feed into the oven
- 100% hard-wired degraded mode design (excluding PLC)

Automation of raw material input

Glass

- SQL-based communication with the site's access control and weighbridges on PC Vue V11
- Managing traffic signals and truck flows
- Management of silo assignments and levels
- Modification to the redundant automation of the M580 composition workshop



Virtualisation and upgrade of a supervision system

Biofuels

- Aveva Intouch
- Setting up Veeambackup and testing replication
- Setting up Top Server for communication with PLCs
- Deployment of all changes on client workstations
- Configuring the redundancy ring

Revamping of a mixing station and 4 furnaces with SAP traceability

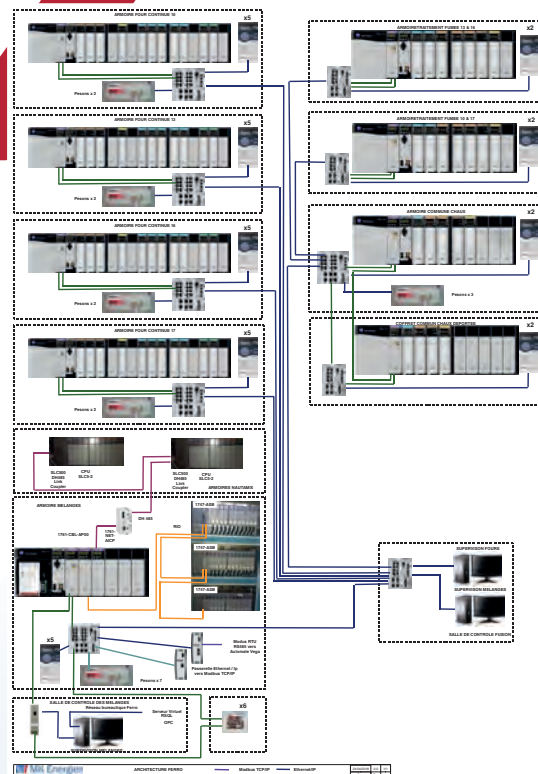
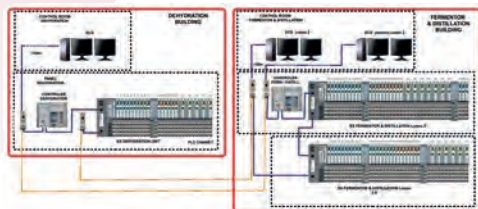
Email

- Setting up a new architecture
 - 8 networked ControlLogix controllers
 - 8 Stratix managed switches
 - 2 FTView supervisions with SAP exchange for batch traceability
 - 5 Panelview
 - Ethernet/IP communicating drives
- Precia Molen weighing system with Modbus/TCP communication
- Communication with older RIO (to SLC500 I/O) and DH485 (to SLC500 PLC) systems

Construction of an export alcohol unit

Agri-food in Argentina

- Definition and implementation of an architecture
 - 3 dual-screen monitors
 - 2 Compactlogix controllers
 - 3 I/O Point remote I/O racks
 - 44 direct motors and 8 drives
 - 16 on/off valves
 - 124 analogue sensors
- Programming and adjustment of 50 level, flow, temperature and pressure control loops



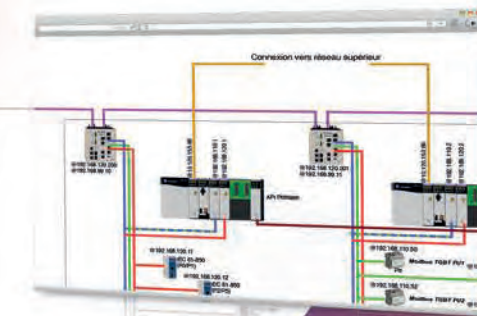
High availability IEC61850 MV loop reconfigurator

Pharmaceutical industry

- Analysis of reconfiguration scenarios for plant backup
- Network of 50 SEPAMs communicating using the IEC 61850 protocol
- Acquisition via remote inputs/outputs in 4 MV substations
- IEC61850 redundant ring with 5 manageable switches
- Reconfiguration of MV loop using supervision and PLC

Rockwell PLANT PAX

- MV/LV power management, standby and corrugated
- Cleanroom air treatment
- Energy and utilities management



Control of two export gas compressors

Oil&Gas in Congo

- Safety functional analysis
- Definition and programming of Guarlogix Safety PLC with Point I/O Safety
- Control of two-stage compressors in Ex zones
- Safety tests, acceptance and commissioning on site

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Our companies

MK Energies Arras

Rue Pierre & Marie Curie
F - 62223 St-Laurent-Blangy

MK Energies Dieppe

25, rue des Avettes
F - 76510 Dampierre-Saint-Nicolas

MK Energies Dunkerque

466, avenue Jean Monet
Rue de Bonn - Zac du Pont Loby
F - 59640 Dunkerque

MK Energies Evreux

42, route des Andely
F - 27200 Vernon

MK Energies Lille

1, rue des Bouleaux
Bâtiment L - 2^{ème} étage
F - 59810 Lesquin

MK Energies Reims

2, rue du Loup
F - 51420 Cernay-lès-Reims

MK Energies Saint-Dizier

Zone d'activité Pré-Moinot
Rue Bois du Roi
F - 52100 Saint-Dizier

MK Energies Saint-Quentin

231 rue René Cassin
F - 02100 Saint-Quentin

MK Energies Valenciennes

Parc d'activité de l'Aérodrome Est
1 Rue d'Hurtebise
F - 59125 Trith-Saint-Léger

MK Energies Vervins

64, rue de Vervins
F - 02140 La Bouteille

MK Global Service & Solutions

Bâtiment « Le Sextant »
2, rue de la Croix Chaudron
CS 30001
F - 51500 Saint-Léonard

MK Major Projects

Bâtiment « Le Sextant »
2, rue de la Croix Chaudron
CS 30001
F - 51500 Saint-Léonard

MK Energies Italia

Via Statuto 6 bis
12100 Cuneo
Italia

Head office

MK Energies

Bâtiment « Le Sextant » - 2, rue de la Croix Chaudron - CS 30001
F - 51500 Saint-Léonard

 **Energies**

www.mk-energies.fr

■ Head office: MK Energies ■ Le Sextant ■ 2, rue de la Croix Chaudron - CS 30001 ■ F - 51500 Saint-Léonard ■ Tel.: +33 3 52 62 04 00
■ Fax.: +33 3 26 47 49 11 ■ contact@mk-energies.fr ■ www.mk-energies.net ■ Simplified joint stock company (SAS) with capital
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