



LUDAN
GROUP

LUDAN GROUP

Business
Overview
2017





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General



General

Who We Are

LUDAN GROUP is proud to be a most diverse provider of integrated solutions for Industrial Development, Plant Optimization, Environmental Issues, and Industry- Specific Application Knowledge.

LUDAN GROUP is a unique blend of companies in the fields of Engineering, Software, Process Control, Environment, Energy and more, located in Israel, western Europe (Holland, Belgium, Spain), Eastern Europe (Romania, Bulgaria, Croatia, Russia) and China.

Our Vision and Philosophy - Built to Last

- ▶ Leading position in its environment
- ▶ Appreciated by professionalisms
- ▶ Leaving a deep impression
- ▶ Managed by consequent generations
- ▶ Several life cycles



Top Management



Top management



Arnon Aharon

Joint C.E.O



Yehuda Sarid

Joint C.E.O



Willem Pronk

CEO – LudanCom



Yuval Alon

C.E.O of Ludan
Engineering Israel



Dmitri Militescu

C.E.O of Ludan
Engineering SRL &
Regional Manager
Of Eastern Europe



Avi Lieber

C.E.O of Ludan Tech



Tidhar Golan

C.E.O of Ludan
Environmental
Technologies

Milestones



Milestones

Ludan Engineering Co. Ltd.

- 1977 - Foundation of Ludan Engineering Co. Ltd.
- 1979 - Ludan South Branch, Israel
- 1983 - Ludan North Branch, Israel
- 1995 - Foundation of Ludan Software & Control Ltd.
- 1997 - Ludan - IPO in Tel-Aviv Stock Exchange
- 1997 - Foundation of Ludan Engineering SRL, Romania
- 2005 - Foundation of Ludancom BV by Ludan Group
- 2005 - Acquisition of KH Engineering BV
 - 1949 - Foundation of KH Engineering as Keynes
 - Acquisition of KH Engineering by Matthew Hall Keynes
 - Acquisition of KH Engineering by AMEC Engineering
- 2007 - KH Engineering NV, Belgium
- 2008 - Foundation of Ludan Engineering Ltd., Bulgaria
- 2009 - Foundation of Ludan Engineering DOO, Serbia
- 2013 - Foundation of Ludan Engineering International Ltd.
- 2014 - Foundation of Ludan RUS Ltd., Russia
- 2015 - Foundation of Ludan China
- 2015 - Acquisition of Technip Benelux N.V. in Belgium
- 2015 - Acquisition of the Industrial Engineering department of Royal Haskoning DHV in Holland
- 2017 - Foundation of Ludan Trade

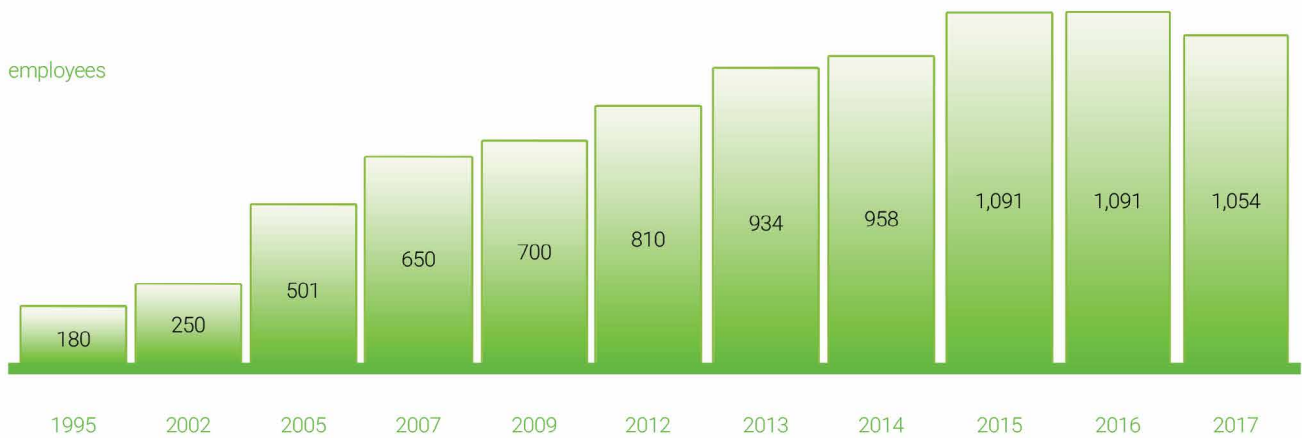
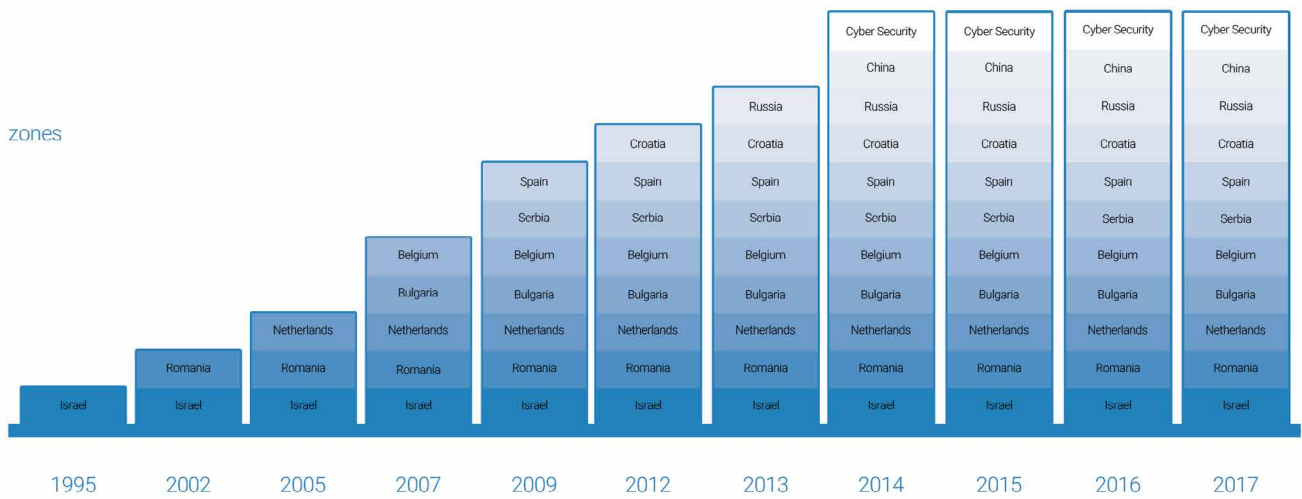
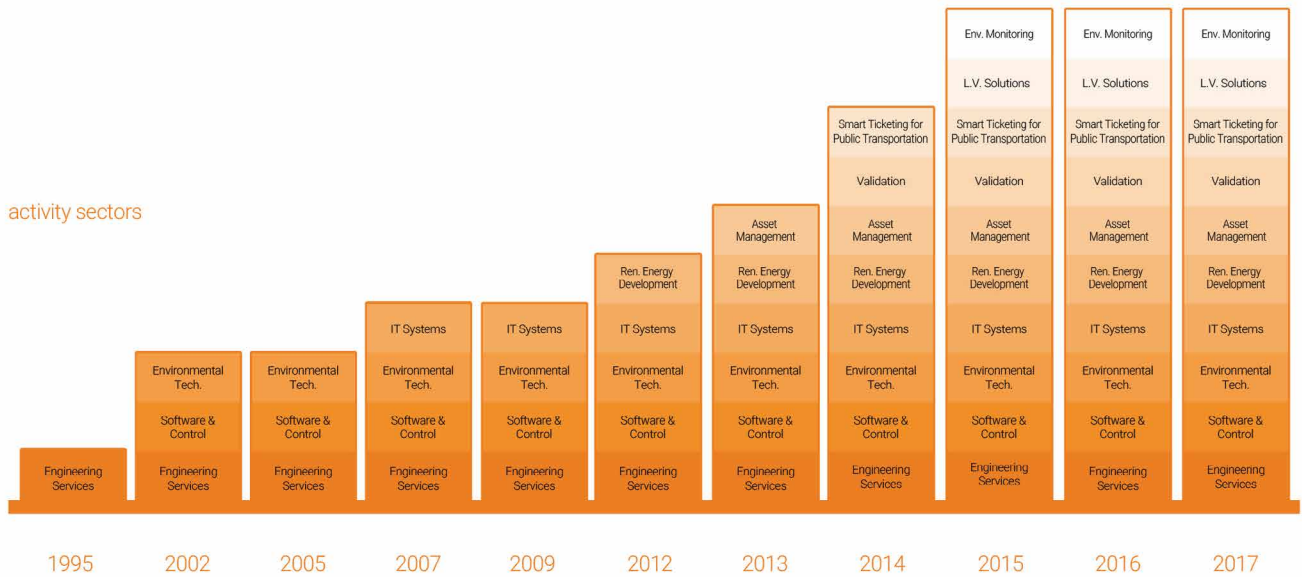
Ludan Tech Ltd.

- 2007 - Foundation of Ludan Tech Ltd.
- 2007 - Acquisition of Symcotech
- 2008 - Acquisition of Tact.
- 2008 - Foundation of Ludan Software & Control Systems SRL
- 2014 - Foundation of Ludan Cyber Security
- 2015 - Acquisition of Ardan Control- Tech.

Ludan Environmental Technologies Ltd.

- 2007 - Foundation of Ludan Environmental Tech Ltd.
- 2009 - Foundation of Ludan Renewable Energy in the Netherlands and Spain
- 2010 - 2014 Foundation of several SPC's to Build, Own and Operate biogas plants.
- 2015 - Acquisition of Eco Tech Environmental Services

Milestones



Group Structure



Ludan Group Structure

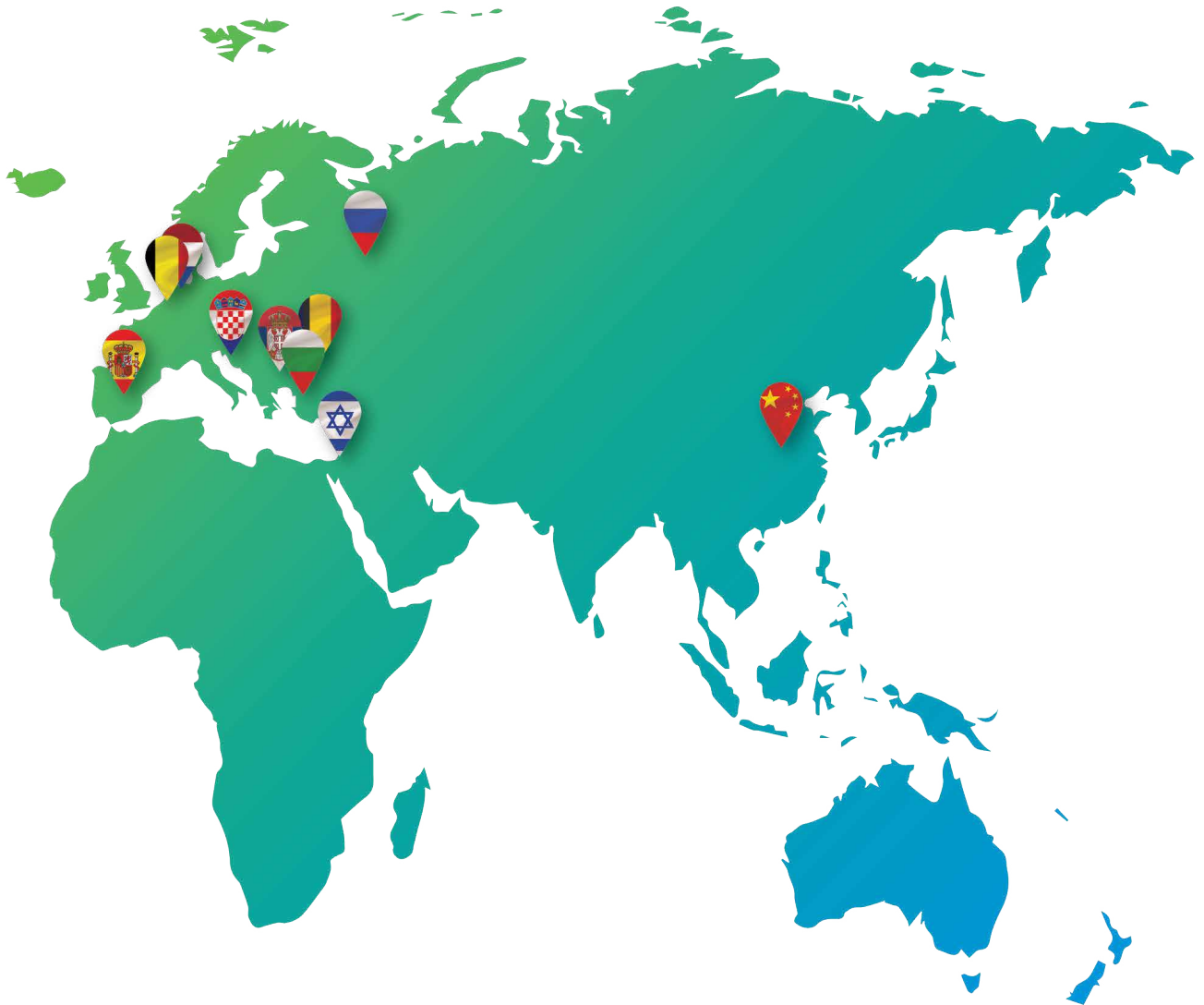
Ludan Engineering Co. Ltd. (Holding Company)



Where to find us



Where to find us



Israel



The Netherlands



Belgium



Spain



Romania



Serbia



Croatia



Bulgaria



China



Russia

Spectrum of Services



Engineering

Main Markets

Refining and Petrochemical, Chemical and Agrochemical, Pharmaceuticals, Food, Semiconductors, Defense industries, and Power Plants.

Services

Services are provided as engineering services in the EPCM or EPC framework, which, inter alia, include:

- Project management
- Preparation and Control of budgets and schedules
- Multidisciplinary design
- Procurement and contracting
- Construction management and Supervision
- Validation (implementation of international standards, such as FDA/GMP)
- Commissioning



Computerized Systems Integration

Services

Software Implementation and maintenance of shelf software of international brands

Cyber Security Infrastructure threats protection solutions

Control Design and implementation of integrated Control Systems

Ticketing Implementation of ticketing systems for public transportation, including back office systems

Automated Test Equipment Supply of ATE systems for the defense industries

Multimedia - Video Conferencing and Smart Electricity Systems

HLS - Access Control and Video Surveillance

BMS - BMS – Building Management system

Street Light Control – street and outdoor light control system and energy saving



Environmental and Energy

Solutions

Providing consulting and remediation solutions for soil and groundwater; proven technologies and track record of treating all types of industrial waste, air pollution (including CO₂ from natural gas wells).

Services

Laboratory tests, field surveying, technology consultation demo-installation, commercial and operating performance, maintenance.

Renewable energies

Energy production using raw materials from the green energy field, such as: recycled municipal waste, agricultural produce, organic waste, etc. (biogas, biomass, gasification and green gas).



Main Markets

Process Industry- Refining and Petrochemical, Chemical and Agrochemical, Pharmaceuticals, Food, Energy and Power Plants.

Services

Procurement Services are provided as agency, representing selected Chinese manufacturers, which, inter alia, include:

- ▶ Local presence in China.
- ▶ Technical involvement in proposal stage.
- ▶ Supporting Chinese manufacturer with International Q.A.
- ▶ Supporting communication during negotiation.
- ▶ Supporting expediting process.
- ▶ After sales support.



Market Presence & Major Clients



Market Presence

Markets/ Industries



Chemical



Energy



Natural gas



**Petrochemical
and Refining**



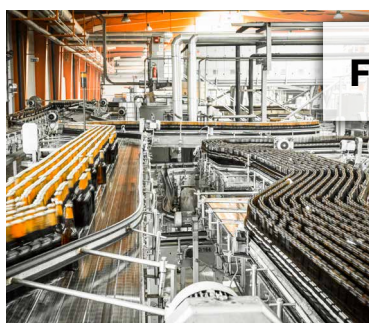
Pharmaceutics



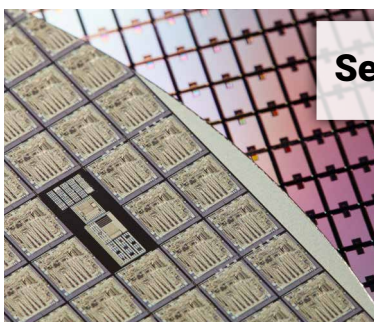
**Public
Transportation**



**Defense
Industry**



Food



Semiconductors



Agrochemical

Major Clients



Main 2017 Highlights



Main 2017 Highlights

The “Nation Station”- Yitzhak Navon Railway Station, Jerusalem

The Yitzhak Navon Railway Station is, by far, the flagship project of the Israel Railways, which consists on multi-modal (railway and tramway) transportation hub, setting up a new milestone for mass-transit infrastructure in Israel.

The goal of this project is to enable public traveling to/ from and inside the capital more convenient and to contribute to boosting the number of passengers on a daily basis including for special events and holidays.

SYMCOTECH provides end - to - end “state - of - the - art” ticketing solutions for public transportation, including the installation and operation of ticketing equipment and by this is implementing innovative solutions for smart ticketing with cutting edge benefits for Israel Railways and its passengers.

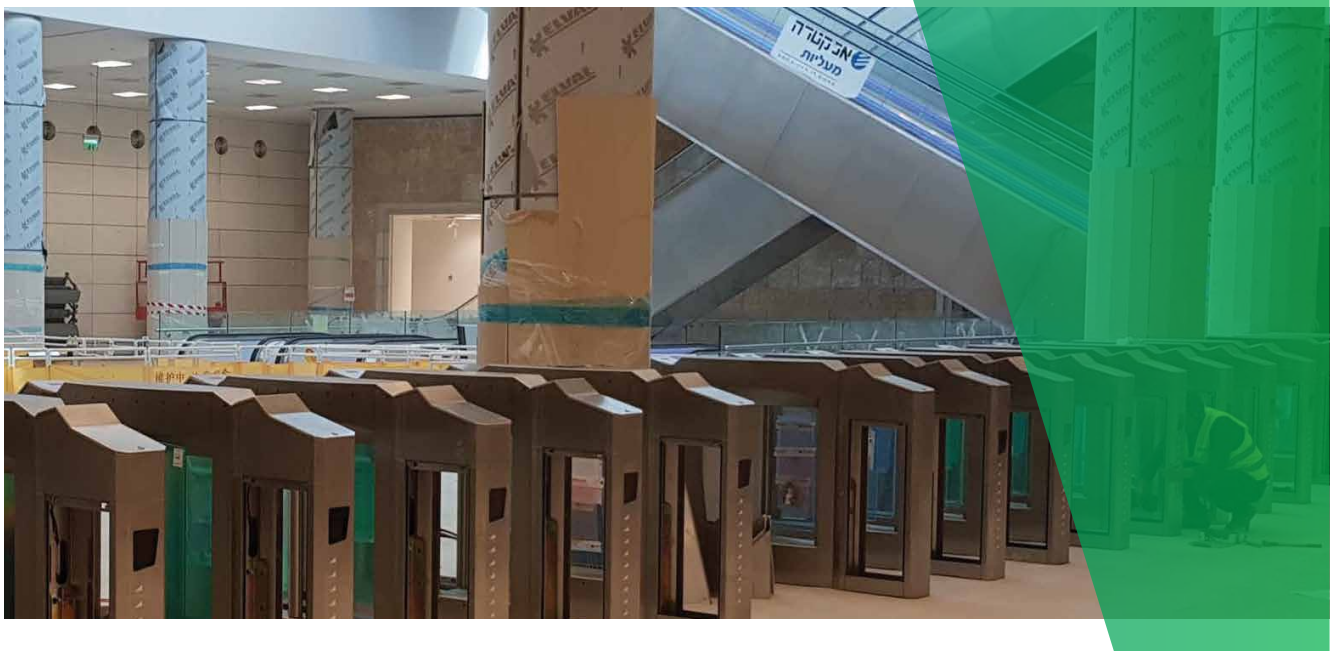
SYMCOTECH oversaw all infrastructure design and installation that have been provided by the selected execution contractor. Also, the commissioning of the equipment and the integration between the equipment and the hub station’s systems were under SYMCOTECH responsibilities.

The Project included, among others: entry and exit gates, Self-Service ticket vending machines, Cashier box, Stewards Validator, Pre - validation Self - Service terminal, Back office workstation, Computer economist, Station server.

The “Nation Station” project is undoubtedly the largest and most sophisticated of its kind in Israel and confronted the challenge of being located at the deepest underground level in Israel (80 meters below ground, which is also one of the deepest in the world).

To that end, the equipment was spread over two levels and required to be lowered by special hoisting devices. Other exciting tasks include the integration of the large number of equipment types involved in this project.

SYMCOTECH is proud to be involved in this venture of major significance for Israel’s capital and, in the same time, is confirming and consolidating its market leader position.



Main 2017 Highlights

INOVYN Manufacturing Belgium NV

Currently in the installation of Inovyn at Lillo site Chlorine is produced by means of Electrolysis of NaCl solution. Additional products are Hydrogen and NaOH solution. In the KeeGAN project for part of the process the NaCl salt will be replaced by KCl salt.

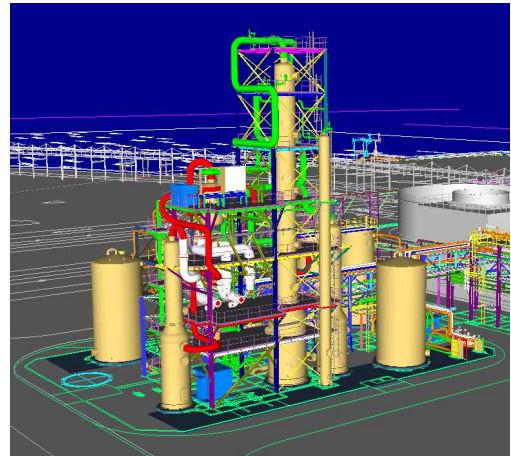
In the KeeGAN project mainly 4 geographical zones are applicable. These zones represent in fact the process steps:

Zone P: Storage and conveying of (raw) KCl salt. The KCl salt will be dissolved for further processing.

Zone B: Purification of the dissolved salt prior to Electrolysis.

Zone E: Electrolysis of the KCl salt solution. Products from this electrolysis are Chlorine and Hydrogen. These will be handled in existing installations, so not part of the Keegan project. For the handling of the other product, KOH (29%), modifications are required for further handling and loading.

Zone L: The KOH 29% is concentrated to 50% solution by evaporation. The 50% solution is stored in storage tanks and transported for sale to truck loading and ship loading.



KLM Project Schiphol

In January 2017 KH Engineering is selected manage the Project Portfolio of KLM. In just 10 months KH Engineering has set up an organization within which a wide range of different projects are managed (150). The projects vary from moving a wall socket, replacing a distribution system to upgrading the entire fire extinguishing water system (extinguishing water pumps 4800 m³ / h) and expanding an electrical main distributor of the KLM Data Centre.

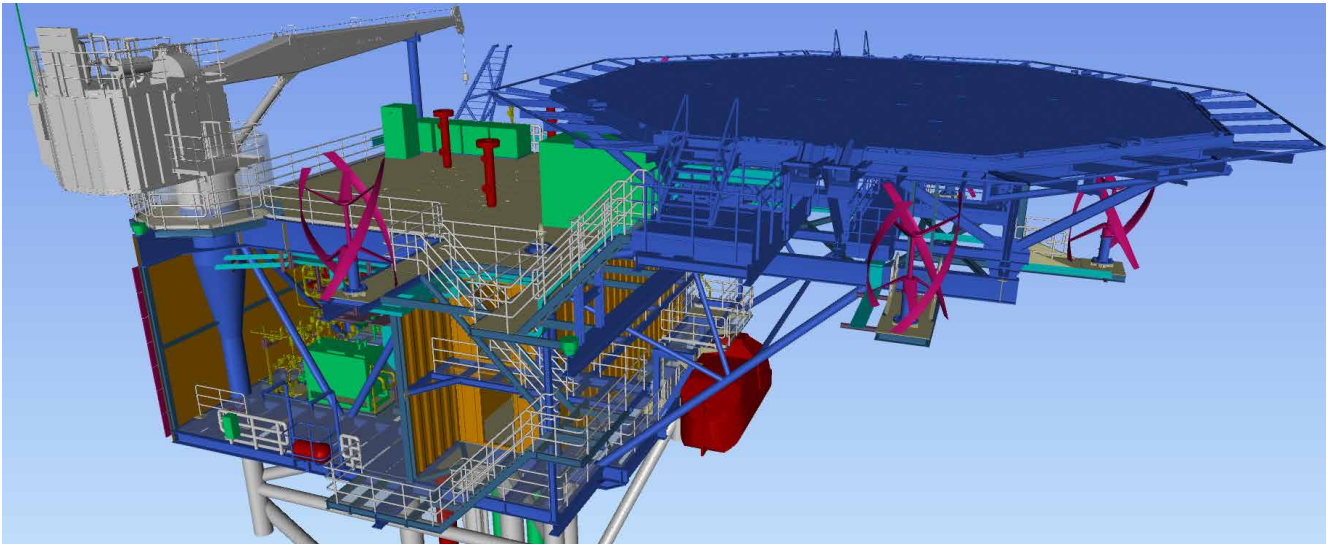


Main 2017 Highlights

ONE (Oranje-Nassau Energy)

Complete off-grid power supply system for the topside facility of a satellite platform, which will be used for gas production wells in the Dutch part of the Southern North Sea.

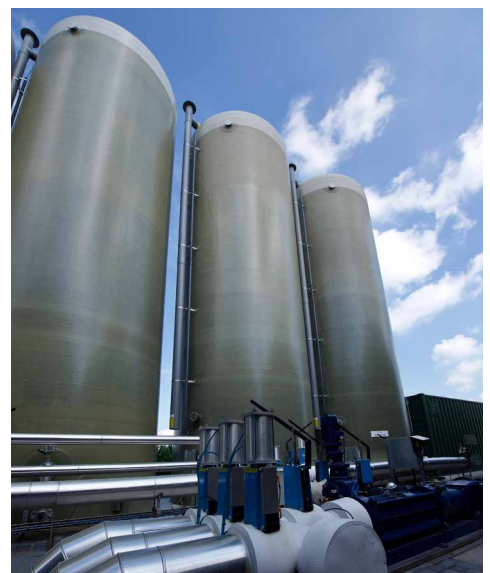
The autonomous power supply is generated by renewable energy sources i.e. Solar panels and wind turbines in combination with a battery back-up system and a back-up diesel generator set.



Almere Biogas Plant Inauguration Event

Ludan Environmental Technologies Ltd (LET) (a fully owned subsidiary of Ludan Group), Almere Biogas Plant was officially held on 7.9.17 an inauguration event at the site in the Netherlands. Almere biogas plant produces 500 m³ of green gas /hour to grid and 5,000 ton per year of liquefied CO₂, based on a mix of manure and agri- waste

LET designed and built the plant through its Dutch subsidiary, Ludan Renewable Energy, a leading Waste to Energy engineering and construction company. Ludan Maintenance and Operations BV, another LET subsidiary, is providing the project O&M services on a



Chimpex EPCM Project - New Grain Terminal in Constanta Harbor, Romania



Chimpex, a subsidiary of AMEROPA AG, based in Constanta, Romania, build a new grain terminal.

The new state-of-the-art terminal has an yearly operating capacity of over 3.5 million tons of grains (wheat, barley, corn, rapeseed, sunflower, etc.) and will allow simultaneous unloading from trains, trucks, barges and loading to PANAMAX vessels up to 63,000 tons. The terminal has a storage capacity of 200,000 tons on 20 vertical cells, can receive cargo by barge at 400 Mt/h, rail at 400 Mt/h, truck at 2 x 400 Mt/h, and has a vessel-loading rate of 2 x 800 tons per hour.

This terminal provides best-in-class services to its customers, protect the environment, ensures a safe working environment for its employees and boasts lots of modern technology and automation.

LUDAN Engineering SRL has successfully executed the Engineering, Procurement and Construction Management (EPCM) project. By executing this technically challenging project, our engineers have even further strengthened their knowhow in the Agro sector, putting us in the upfront position amongst the Eastern European Companies serving the process industry.



2017- Financial Data



2017- Financial Data

Development of Financial Results 2015 - 2017

(Detailed data are available in the "Overview 2017"/ "Auditors Reports" in the Group website)

Consolidated Balance Sheet (in '1.000 EURO)	2015	2016	2017
Current assets	66,288	63,698	66,544
Investments and long-term receivables	11,728	12,155	11,454
Fixed assets	4,852	4,380	4,226
Intangible assets after amortization	7,265	6,805	6,461
Total assets	90,133	87,038	88,685
Current liabilities	48,223	47,516	52,025
Long-term liabilities	26,260	21,195	16,582
Minority interest	1,137	1,330	1,513
Shareholders' equity	14,513	16,997	18,565
Total liabilities and shareholder's equity	90,133	87,038	88,685
Consolidated Results (in '1.000 EURO)	2015	2016	2017
Sales	120,253	136,910	142,115
Gross Profit	12,177	20,225	20,457
Operating earnings (losses)	(278)	5,489	5,767
Earnings (losses) before income tax	(1,822)	3,431	3,784
Earnings (losses) after income tax	(1,450)	2,125	2,373
EBITDA	2,858	8,418	7,839



Group Contacts



Group Contacts

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LUDAN
GROUP

global experience
local approach