HEALTH & MEDICINE

advanced technologies implementation

SYNECTA®

ABOUT US

We aim for executive decision-making based on in-depth health medicine industry research, where the expertise gained allows us to respond to the market potential with greater accuracy and to be prompt in timely project delivery and its successful long-term execution.

We are cooperating with the best, well-known industry technical specialists to ensure the strictest and highest quality standards will be achieved, validated and economically feasible.

Our technical collaborations involve respectable technology brands and they span list of projects, such as most noted as the 2,000+ bed Motol hospital (Prague, CZ) and other EU projects.

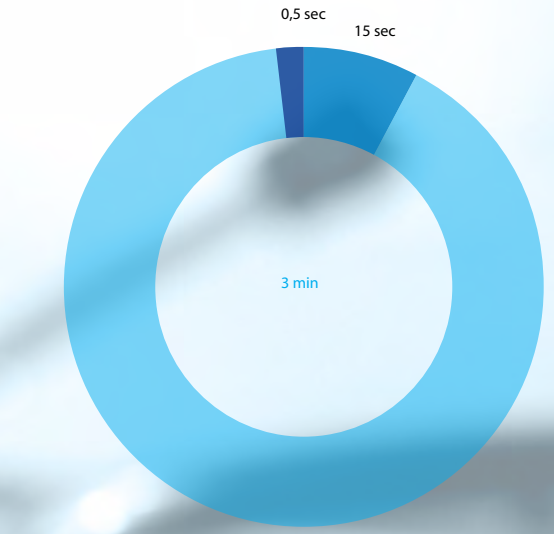
The activity of SYNECTA a.s. in medicine is divided into four main categories:

- ENERGY REPOWERING
- MEDICAL WASTE INCINERATION
- CLEAN ROOMS
- PROVIDING FUNDING OPPORTUNITIES

HEALTH & MEDICINE ADVANCED TECHNOLOGIES IMPLEMENTATION IN 3 KEY AREAS

EMERGENCY POWER SUPPLY SYSTEM INSTALLATIONS

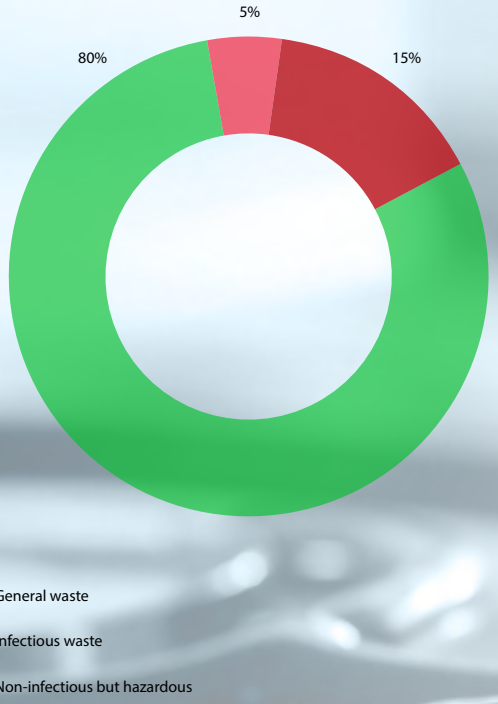
Maximum duration for power cut & switch to back-up



It is crucial to maintenance uninterrupted electricity supplies for both common infrastructure and critical care facilities.

MEDICAL & COMMON WASTE UTILIZATION

Medical waste composition



EU strict regulations and directives for waste utilisation.

"CLEAN" FACILITIES INTRODUCTION

- Hospitals
- Medical healthy establishments
- Laboratories
- Pharmacy manufacturing
- Electric energy manufacturing

The highest standarts and the most advanced technology solutions are required for patient safety.

ENERGY REPOWERING

OUTAGES

- **Pre-planned**
- **Unscheduled (blackouts)**

SYSTEM TO BE COVERED

- **Overall:**
  - emergency lighting
  - alarm system
  - battery chargers
  - HVAC system
  - water distribution system
- **Medical:**
  - intensive care
  - operating & delivery rooms
  - analysers & patient monitors
  - respiratory devices
  - patient monitors
  - computer systems and hospital data

Managing Hospital Emergency Power Testing Program

- **Generator Load Testing**
- **Emergency Power Supply System (EPSS) Maintenance**

Main objectives of the testing program:

- train medical staff h w to cope with an energy outage
- control the functionality of medical equipment and infrastructure systems in building to be powered from back-up generators
- minimisation of impact providing neccessary medical procedures and patient protecting

Testing program should be done weekly or monthly depending on country regulatory requirements:

- European IEC standard: 60364-7-710

(changeover devices should be tested every 12 months; genset combustion engines should be tested monthly; 50% to 100% of rated power)

- US: NFPA 99 & 110
- UK: HTM-06-01

Source:http://www2.schneider-electric.com/documents/support/white- papers/wp_healthcare_automoting-energency-power.pdf

At SYNECTA a.s. we understand that the emergency power control system is a critical constituent of modern medicine. The hospitals should be prepared to ensure proper operation of medical system even in cases of emergency. The reliability and location of the electricity distribution network are the first conditions to be taken into consideration. The backup generators and emergency power supply system must be tested at regular intervals to provide maximum functionality in emergency cases in order to supply key medical systems (e.g. respiratory devices, emergency lighting, ventilation).

Taking into account changes in modern technologies, medical operations standards and related industries, SYNECTA a.s. offers:

Manufactures & Suppliers of Emergency Power Control System

- **POWERVAR 3200 series 3- phase UPS**
- **UPS Schneider Electric**
- **ABB emergency power control system**
- **Emerson Network Power's ASCO technologies**
- **ČKD**
- **Block**

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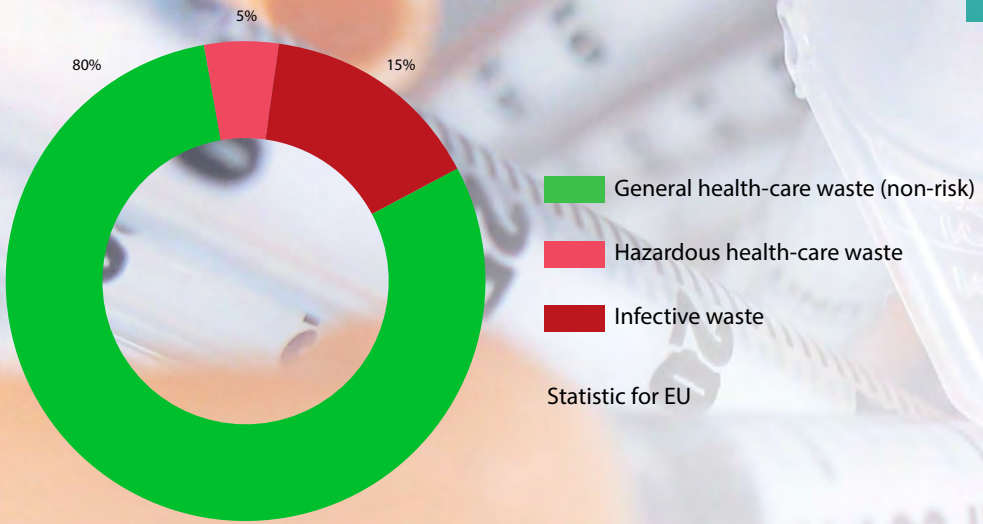
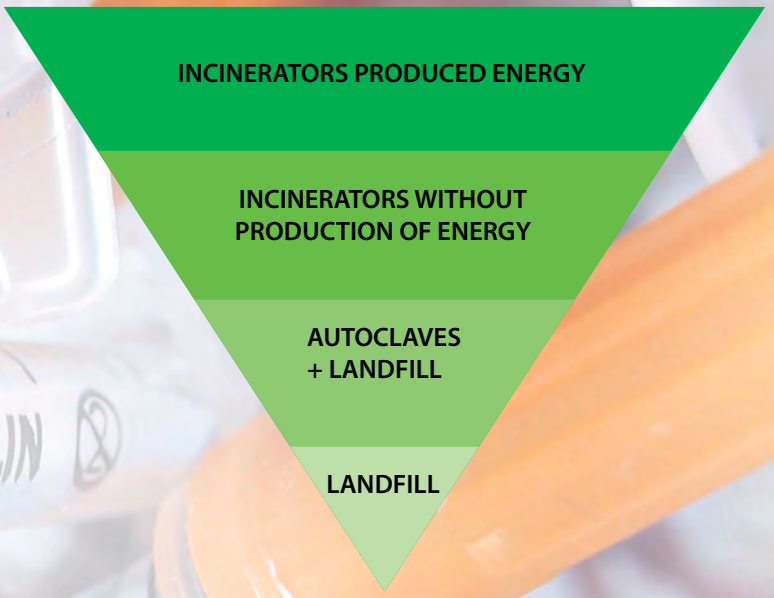
MEDICAL WASTE INCINERATION



TREATMENT OF MEDICAL WASTE



Air emissions
The incinerators we offer are designed with pollution prevention equipment.

Special equipment controls:

The limit values for incineration plant emissions to air are set out in Annex V to the EU Directive. They concern heavy metals, dioxins and furans, carbon mon-oxide (CO), dust, total organic carbon (TOC), hydrogen chloride (HCl), hydrogen fluo ide (HF), sulphur dioxide (SO_2) and the nitrogen oxides (NO and NO_2).

- The incineration process can be applied to almost all medical waste types, including pathological waste; the process reduces the volume of the waste by up to 90%
- Any size hospitals from 1000 beds 4,000 kg / a day - - - → 3 MW
- Construction 6-12 months, maintenance period 10-15 years
- Incineration is the best way for treatment.
- Autoclaves + landfil
  Autoclaves are used to destroy all micro-organisms
- Landfill - N

SYNECTA®

CLEAN ROOMS

HEALTH & MEDICAL INFRASTRUCTURE EFFICIENCY

CLEAN ROOM

Modern technology
Efficie y
Design
Integration

DESIGN WORK

- Technical support
- Turnkey realisation
- Commissioning and validation
- Training of personnel
- Warranty and post-warranty maintenance

Operating theaters

- **Infrastructure**
  - **Parts of the operating block**
    - Pre-operative room for preparation of all the necessary medical personnel
    - Changing room
    - Pre-operative room for preparation of a patient for surgery / Transfer of a patient
    - Post-operative ward
    - Storage of sterile materials
    - Material sluices (throughput cabinets)
  - **Standard components of the health care system**
    - Partition wall panels and their accessories
    - Glazing of partition wall panels
    - Ceiling panels
    - Throughput cabins
    - Light fitting
    - HVAC components
    - Filtration extenders
    - Filtration extenders for operating theaters
    - HVAC extenders and grilles
    - Circulation units
    - Laminar fl w field
    - Phones for indoor operation in clean rooms
    - Stainless steel furniturex
    - Wall protections and control panels
- **Technology**
  - Operating table
  - Operating lighting units
  - Audio and video equipment

General use room

- Furniture
- Audio and video equipment
- HVAC components
- Light fittings

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FUNDING

SYNECTA a.s.

Project idea	Implementation

Goals:

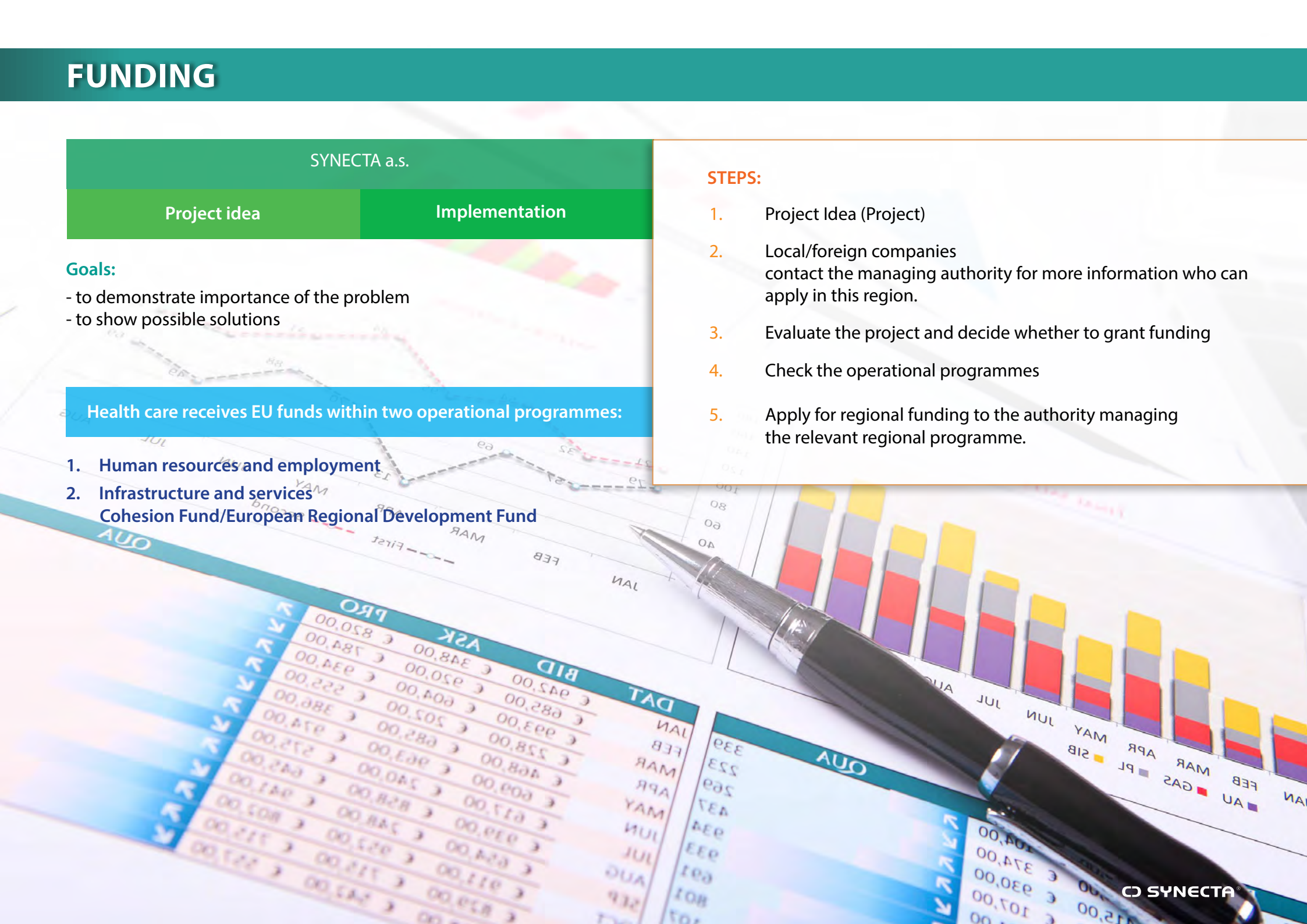
- to demonstrate importance of the problem
- to show possible solutions

Health care receives EU funds within two operational programmes:

1. **Human resources and employment**
2. **Infrastructure and services**
   Cohesion Fund/European Regional Development Fund

STEPS:

1. Project Idea (Project)
2. Local/foreign companies
   contact the managing authority for more information who can apply in this region.
3. Evaluate the project and decide whether to grant funding
4. Check the operational programmes
5. Apply for regional funding to the authority managing the relevant regional programme.



SYNECTA ADVISORY IN MEDICINE

THANK YOU FOR YOUR ATTENTION

WE CREATE VALUE-ADDED SERVICE THROUGH A WELL-THOUGHT AND EFFICIENT APPROACH WHICH WILL WORK FOR GENERATIONS

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