ENERGOPROJEKT-KATOWICE SA

Effectiveness • Potential • Knowledge

epk@epk.com.pl

www.epk.com.pl

Leader of complete designing and advisory service

One of the largest design and engineering companies in Poland.

Partner **cooperating with the world's largest companies** in the domestic and international markets.

A company with an established **leadership position in the energy sector**.

Independent joint-stock company (employee ownership).

Experienced engineering and management **staff**.

Focus on **Customer goals**.

Comprehensive investment service from concept to completion.

Presence in projects related to the country's **energy transition and modern energy sources**.

75 years
consistent development

Over **a hundred**
power and thermal units

More than **one milion**
project items developed

Over **30 000 MW**
Total capacity of designed units

References
in all branches of industry

Solutions **in line**
with the goals of Sustainable Development

The EPK Group

ENERGOPROJEKT-KATOWICE SA
Headquarters: **Katowice**
240 specialists

ENERGOPROJEKT-WARSZAWA
Location: **Warsaw**
Industry: **Hydrotechnical**
36 specialists

K1 Projekt
Location: **Siedlce**
Industry: **Steel Structures**
32 specialists

B2 Projekt
Location: **Trzebinia**
Industry: **Construction**

TD Energo
Lokalizacja: **Cracow**
Industry: **Transmission and Distribution**
26 specialists

EPK PV1–3
Location: **Katowice**
Industry: **PV Farm Design**

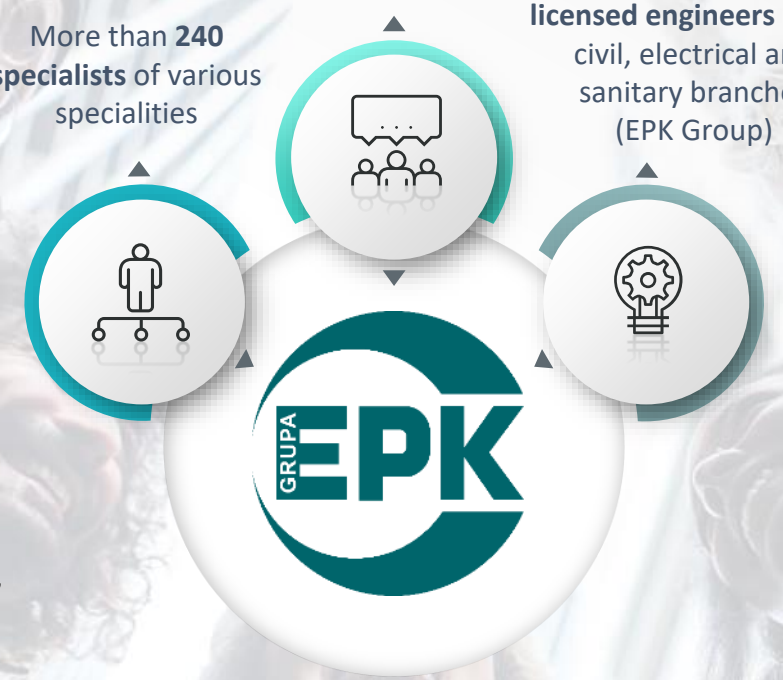
Our value are People!

- Economical and legal advisors
- Automation, telecommunications and programming specialists
- Architecture, construction, sanitary, HVAC, fire-fighting, hydrotechnic specialists

94 specialists in subsidiaries

More than **240 specialists** of various specialities

98 engineers licensed engineers in the civil, electrical and sanitary branches (EPK Group)



- Specialists in environmental protection and RES
- Electricians, transmission and distribution line specialists
- Process, mechanical, piping, hydropower, water&sewage treatment specialists

Our services and business areas

Pre-investment consulting services, Permit obtaining process

Contract Engineer, Substitute Investor (EPCM)

Calculating carbon footprint, decarbonization strategies and achieving climate neutrality

Complete design documentation for the construction phase, coordination of design works as Designing Leader

Advice and supporting of the tender process

Areas of activity

Sources of electricity and heat:

- Carbon technologies;
- Natural gas-based technologies;
- Technologies based on fuels
  Liquid fuels (LFO, HFO);
- Biomass and WTE;
- Hydropower;
- Photovoltaics;
- Offshore wind farms;
- H2 Factories;
- Energy storage facilities.

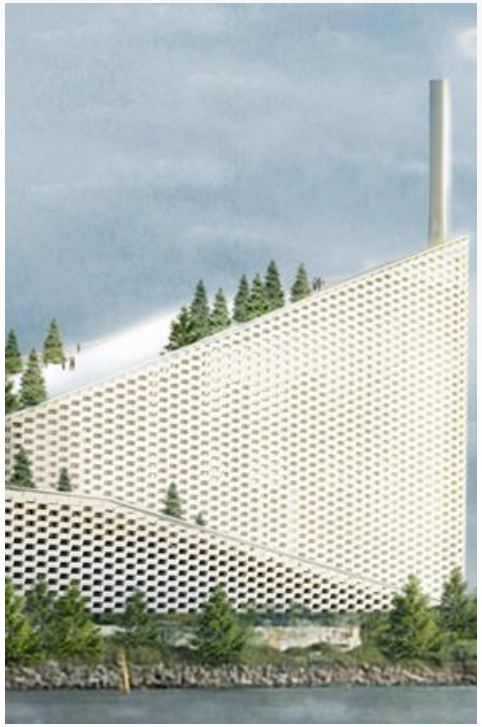
Transmission and distribution networks

Key References

Power plants

CCGT

Waste incineration plants



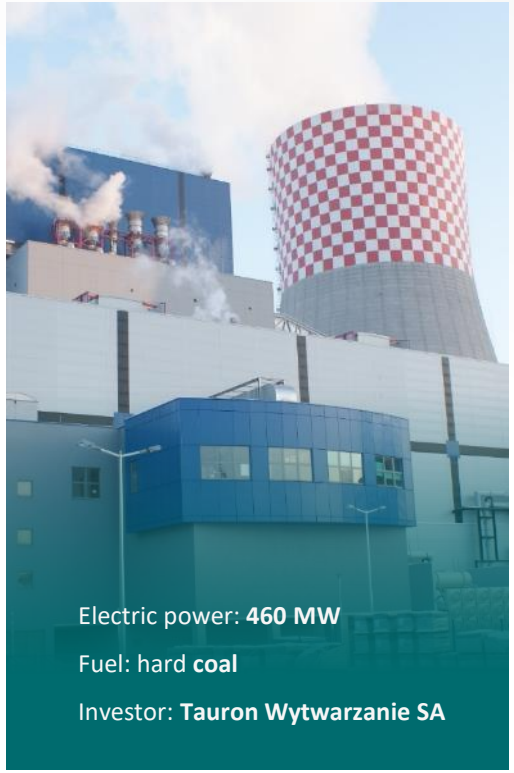
Green Energy

Nuclear Energy

Power Plants

Poland

Lagisza



Electric power: **460 MW**

Fuel: hard **coal**

Investor: **Tauron Wytwarzanie SA**

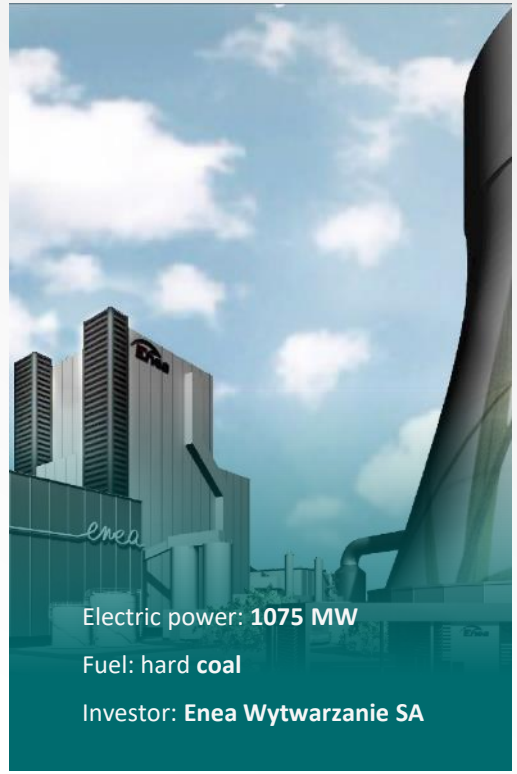
Jaworzno

Electric power: **910 MW**

Fuel: hard **coal**

Investor: **Tauron Wytwarzanie SA**

Kozienice



Electric power: **1075 MW**

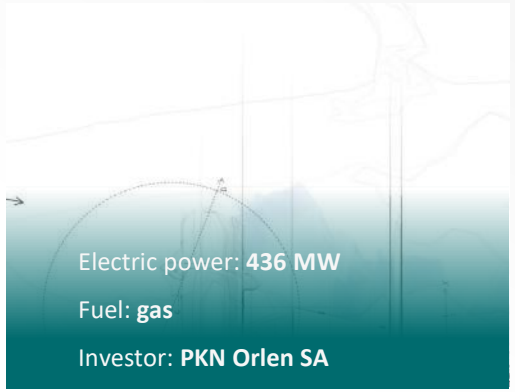
Fuel: hard **coal**

Investor: **Enea Wytwarzanie SA**

CCGT

Poland and the World

Wloclawek



Electric power: **436 MW**

Fuel: **gas**

Investor: **PKN Orlen SA**

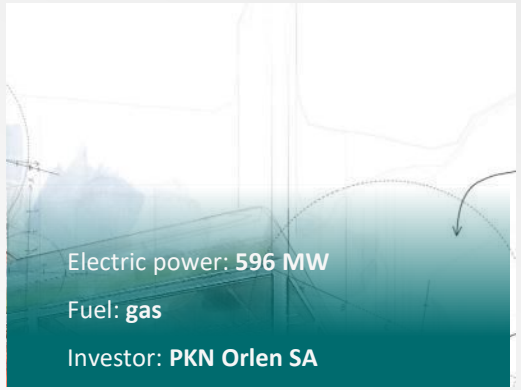
Stalowa Wola

Electrical power: **450 MW**

Fuel: **gas**

Investor: **PGNiG, Tauron PE SA, ECSW**

Plock

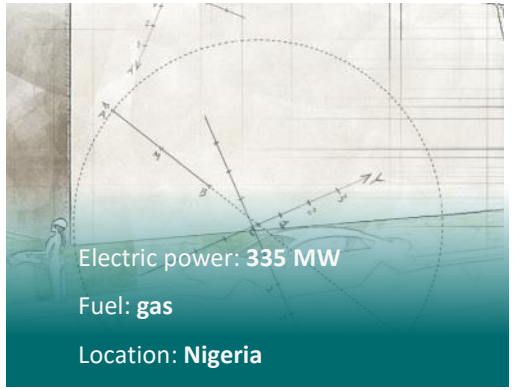


Electric power: **596 MW**

Fuel: **gas**

Investor: **PKN Orlen SA**

Omotosho I

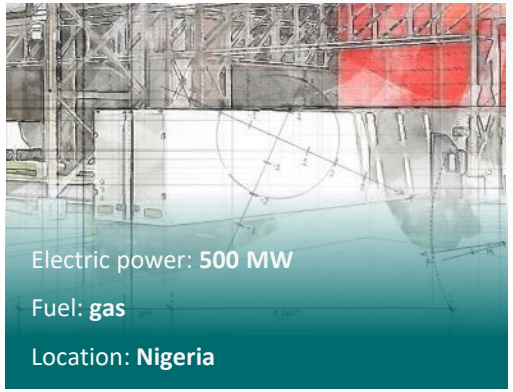


Electric power: **335 MW**

Fuel: **gas**

Location: **Nigeria**

Omotosho II

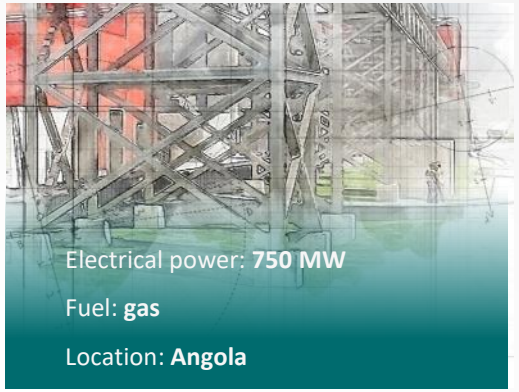


Electric power: **500 MW**

Fuel: **gas**

Location: **Nigeria**

Soyo I



Electrical power: **750 MW**

Fuel: **gas**

Location: **Angola**

Waste Incineration Plants

Poland and the World

Amager Bakke,

ITPOE Rzeszow

Peterborough, England

Teeside, Denmark

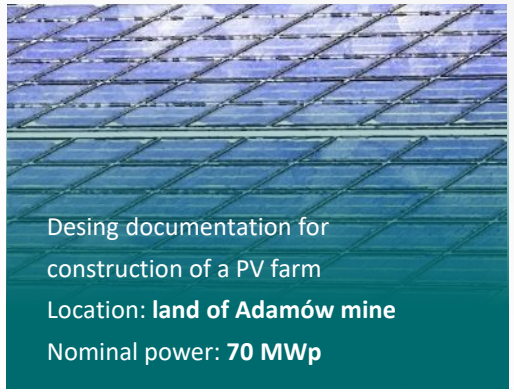
ITPOE Olsztyn

Filbornaverke, Sweden

Green energy

Photovoltaics

PV farm

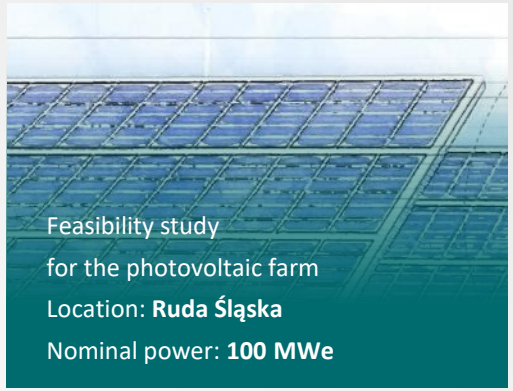


Desing documentation for
construction of a PV farm
Location: **land of Adamów mine**
Nominal power: **70 MWp**

PV farm

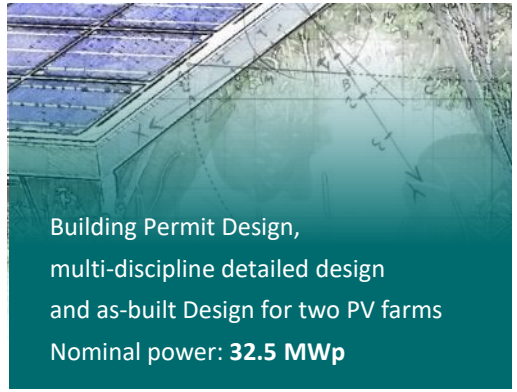
Building Permit Design for five
Photovoltaic Farms.
Location: **Zamojszczyzna**
Nominal power: **~125 MWp**

PV farm



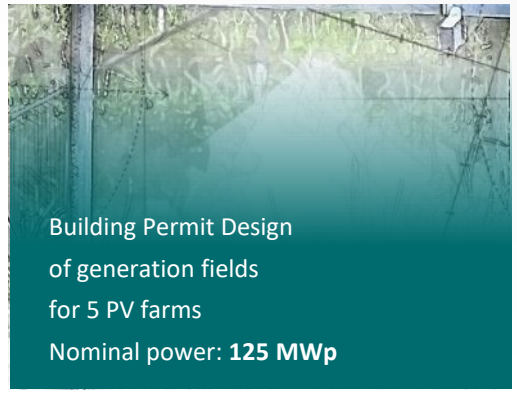
Feasibility study
for the photovoltaic farm
Location: **Ruda Śląska**
Nominal power: **100 MWe**

PV power plant



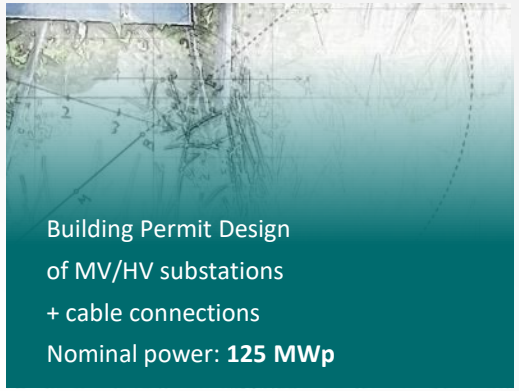
Building Permit Design,
multi-discipline detailed design
and as-built Design for two PV farms
Nominal power: **32.5 MWp**

PV farm



Building Permit Design
of generation fields
for 5 PV farms
Nominal power: **125 MWp**

PV farm



Building Permit Design
of MV/HV substations
+ cable connections
Nominal power: **125 MWp**

Generation fields

Full-scope design support

Output of power

Full-scope design support

Green energy

Hydrogen

- Preliminary concept for a pilot hydrogen production and refueling system;
- Development of a hydrogen production concept;
- Building Permit Design of a 5 MW hydrogen plant along with associated infrastructure and obtaining all administrative permits;
- Design of hydrogen refueling stations, including obtaining all administrative permits for 5 locations.
- Carrying out location analyses for a hydrogen plant;
- Preparation of Feasibility Study and Environmental Impact Report for hydrogen plant.

Hydrogen generation facilities

Full-scale project support

Charging stations

Full-scale project support

Green energy

Offshore wind farms

- Concepts and studies related to power output from offshore farms.
- Analyses related to the possibility of connecting offshore farms to the grid.
- Thermal impact assessment of the designed cable line for the Environmental Impact Assessment Report - FEW Baltic II transmission infrastructure

Technical advice for the project entitled "Offshore Wind Farm Complex with a Maximum Total Capacity of 1200 MW and Technical Infrastructure, Measurement and Research, and Service Associated with the Preparatory, Execution, and Operational Stage" in the scope related to connecting the complex to the national grid

Preparation of technical procurement documentation and technical advice during the procurement procedure for selecting an EPC contractor for the land connection (line and substation) to the national grid - OWF Baltica-1 and Baltica-2.

Performing the function of the Contract Engineer for the purposes of the implementation of the investment at the land connection (line and substation) for OWF Baltica-2

Offshore Part

Technical advice

Onshore part

Full-scope consulting and design support

Nuclear energy

The past

PGE EJ SA

Acquisition and compilation of data with sources on 20 sites where future construction of a nuclear power plant is possible.

June 2011

Min. of Economy

Expert opinion on the criteria for locating nuclear power plants in Poland and evaluation of the agreed locations.

March 2010

PGE EJ SA

Technical and economic analysis of the impact of cooling conditions on the efficiency of nuclear unit construction and operation.

November 2010

PGE EJ SA

Information on legal and -administrative requirements for the preparation of an investment project in the Polish energy sector.

August 2010

PGE SA

Analysis of the profitability of PGE SA's participation in the construction of a new nuclear power plant in Ingalina, Lithuania, and the construction of a Poland-Lithuania electricity interconnection.

August 2008

KIEFER & VOSS GMBH

Executive documentation for the pipeline facilities of the Olkiluoto nuclear unit in Finland.

August 2006

Nuclear energy

Today

Completed or ongoing contracts:

- Four contracts have been executed for the preliminary selection and analysis of nuclear power plant sites, and a radioactive waste repository.
- Advisor in the process of implementing SMR technology in Poland based on Hitachi BWRX-300 reactors.
- NCBJ - HTGR reactor (research project in Poland) – basic design for a nuclear island and for a conventional energy conversion plant island.
- Signed framework agreements supporting the investor in the process of building nuclear power plants in Poland (large-scale and SMR).
- Supporting the Bechtel-Westinghouse consortium with standards and permitting advice.

Signed agreements:

KHNP - September 2018

Bechtel - April 2022

Daewoo Engineering & Construction

Doosan Enerbility - July 2022

Westinghouse - September 2022

KHNP - October 2022 (renewal).

EDF - evaluation visit

Nuclear energy

Today

DEsire

The main objective of the project is to comprehensively prepare a plan for the decarbonization of the country's power industry through modernization based on the generation III/III+ and IV of nuclear reactors.

Identification and analysis of the country's energy and associated infrastructure for its adaptation in the process of modernization with Generation III/III+ and IV nuclear reactors.	Organization and safety of the process of modernization and operation of power plants and power units.
An integrated model for evaluating the energy and economic aspects of nuclear reactor deployment.	Plan to modernize power plants and power units through the use of Generation III/III+ and IV nuclear reactors.

Politechnika Śląska · Ministerstwo Klimatu i Środowiska · EPK · Instytut Sobieskiego · ichtj · NCBR Narodowe Centrum Badań i Rozwoju

Nuclear energy

Today

Full-service consulting and design-engineering support:

- Field analyses - preliminary and preparatory work - selection of potential sites (preliminary site selection) - IAEA guidelines and key criteria;
- Preparation of a localization report for the selected site;
- Preparation of an environmental impact report;
- Preparation of a feasibility study;
- Comprehensive engineering documentation for the issuance of the basic decision on the construction permit;
- Comprehensive design documentation at the construction stage;
- Managing the process of changes relevant to construction law, until to the issuance of the final version of a replacement building permit design.

Software used in EPK

basic CAD software (2D, 3D):

Microstation, AutoCad, PowerDraft

Large, complex objects and installations, spatial coordination:

PDMS, SP3D (Smart Plan), NAVISWORKS

Process plants (small and medium), flue gas ducts:

Solid Works

P&ID diagrams:

COMOS

project management:

MS Project

documents and project document management:

Project Wise

structure modeling:

Tekla Structures, BOCAD, Bentley AECOsim, Nemetschek Allplan

detailed drawings of steel structures:

Tekla Structures, BOCAD, Bentley Structural

Detailed drawings of reinforced concrete structures:

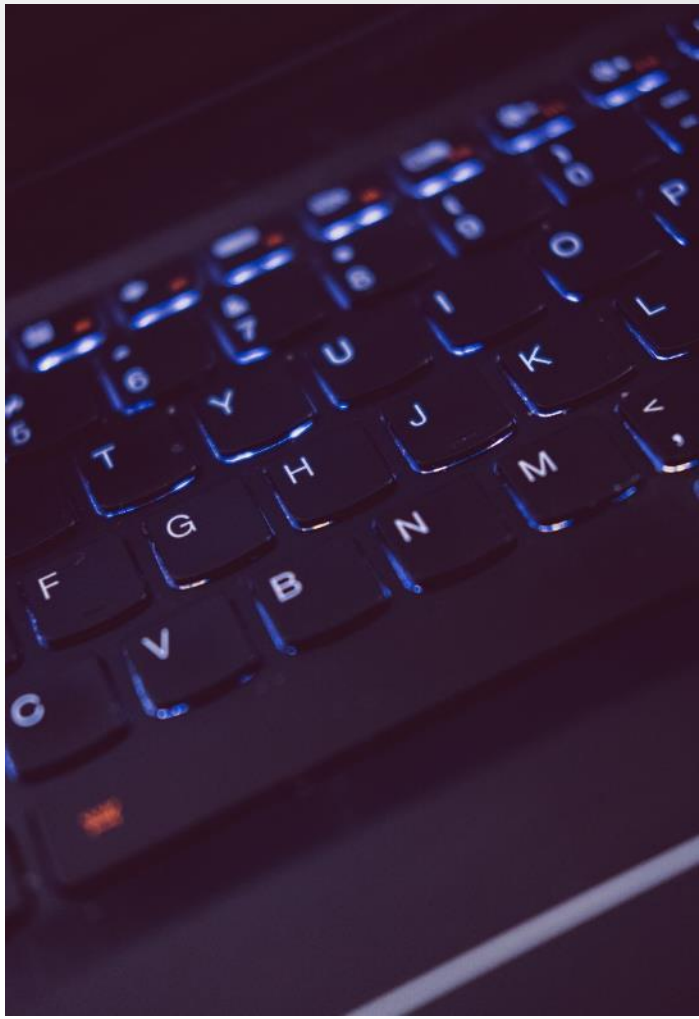
Nemetschek Allplan

computational analyses:

Robot Structural Analysis, RSTAB / RFEM, PROKOP, RC CALCULATOR, STAAD Pro, Specbud, MathCAD, Ansys

architectural documentation:

TRIFORMA, Bentley AECOSim, SketchUP, Autodesk 3ds Studio, PHOTOSHOP, COREL DRAW



Software used in EPK

Thermal process design and analysis:

Thermoflow, Transys 18

flow modeling - CFD simulation software:

Thermoflex, AFT, Apros, SolidWorks Flow Simulation,

ANSYS NLS / FLUENT

Elasticity calculations for piping systems, strength analyses:

AutoPipe, Caesar II, Rohr 2, SolidWorks Simulation Premium, VVD

3D SCANNING (processing and preparation of scanned material)

traffic and industrial noise analysis,

creation of acoustic maps:

SoundPlan Professional, HPZ 2001

sound insulation calculations:

INSUL

acoustic absorption:

ZORBA

industrial noise forecasting:

LEQ Professional

modeling the spread of pollutants

in the atmospheric air:

OPERAT-FB package

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