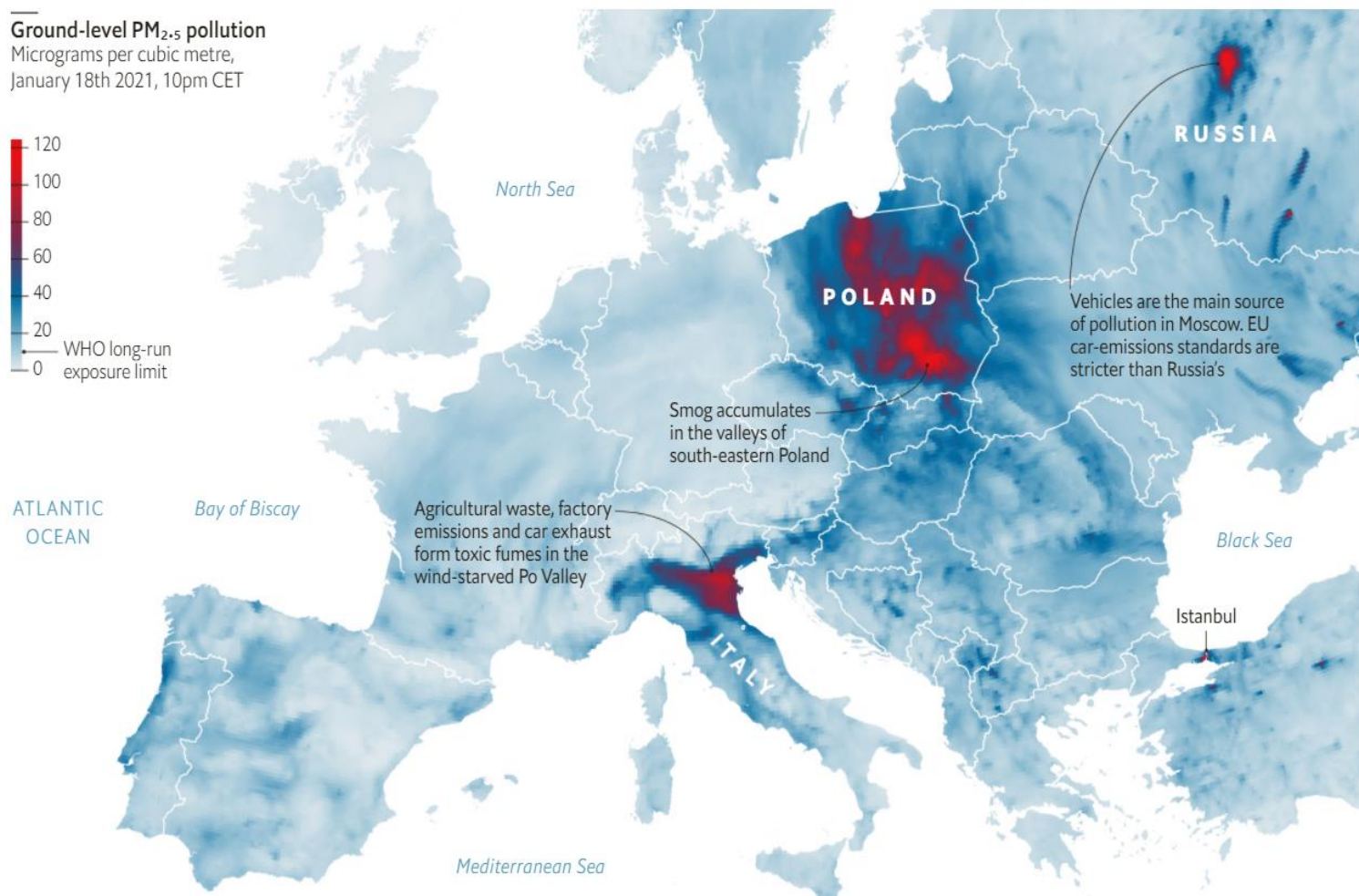


- | Energy market in Poland
- | Company's overview
- | Perspectives for SMR technology in Poland

December 2021

Air pollution is one of the most important problems in Poland to solve

JAN 30TH 2021



- Poland is one of the most polluted countries in the EU
- Around 48,000 people, mostly the elderly, die prematurely every year from diseases linked to air pollution
- According to a 2016 World Health Organization report, 33 out of 50 most polluted cities in the EU are in Poland

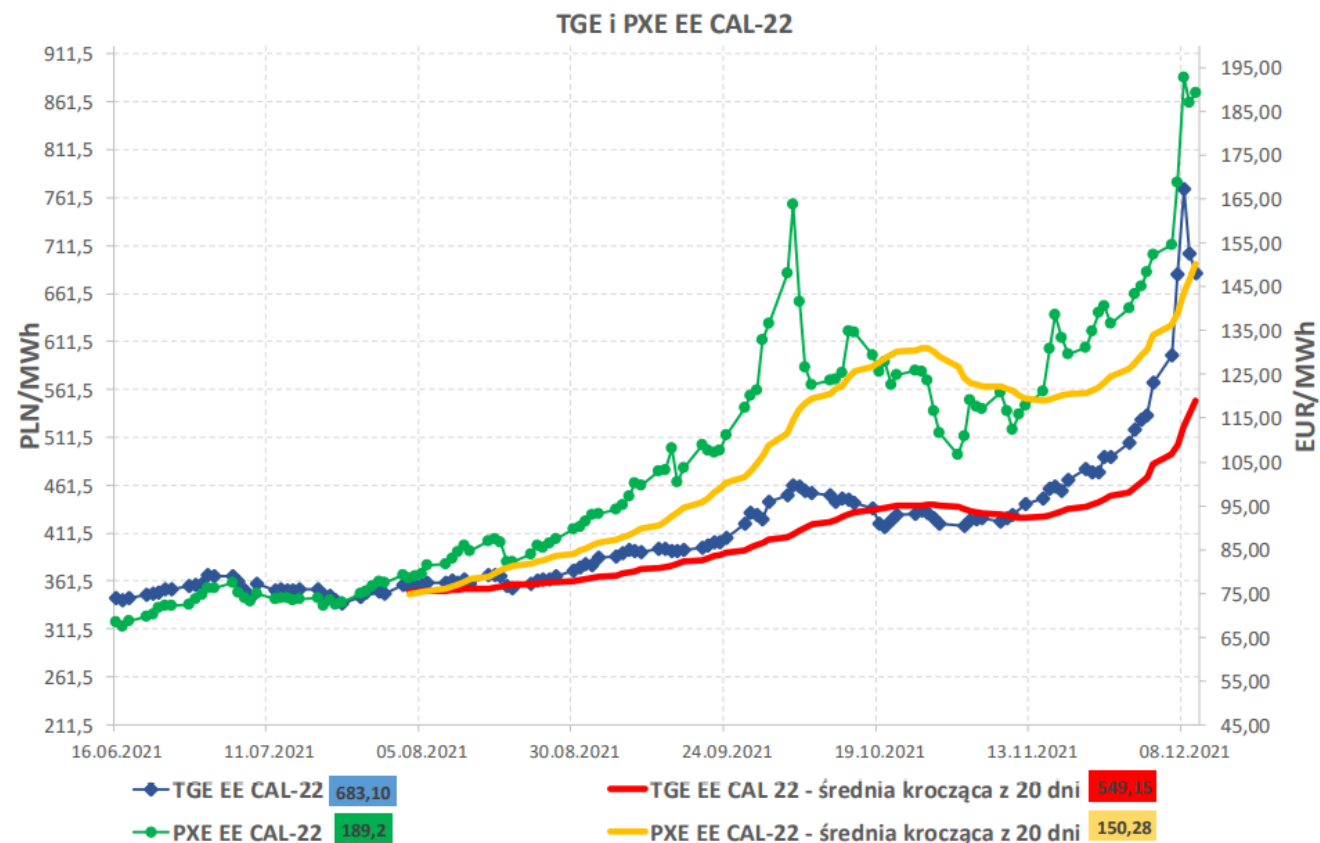
Energy – Poland's main problem



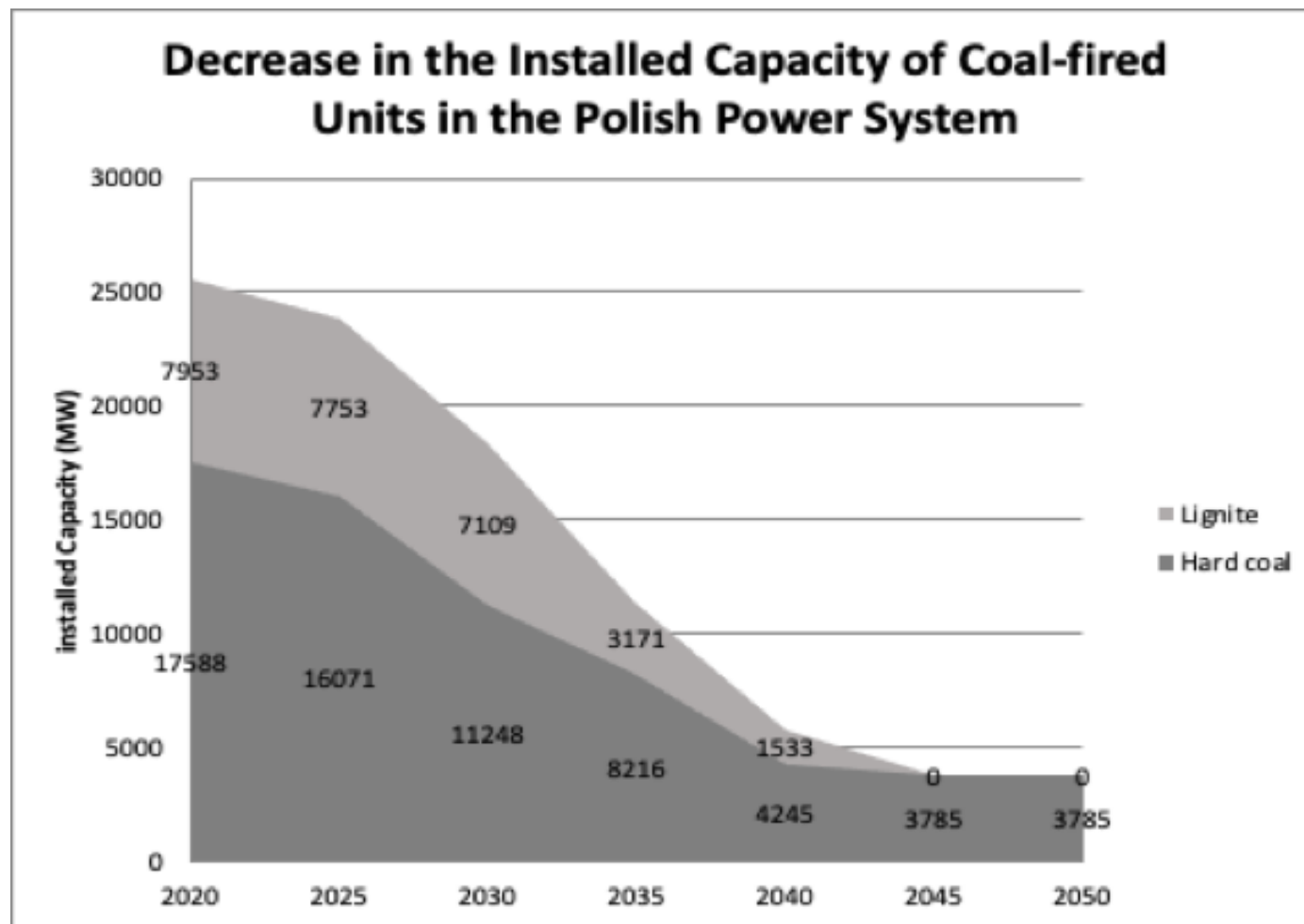
- Coal-reliant economy and rising prices of CO2 emissions
- Small renewable sources (e.g. no offshore)
- Outdated, not efficient power plants
- Large import (mostly from Russia) of oil, natural gas, and hard coal
- Dynamically rising labour costs
- Rising costs of energy on international market

Wholesale energy prices

TGE - Polish Power Exchange, PXE – Power Exchange Central Europe



Coal-fired units will be consequently shut down over the coming decades



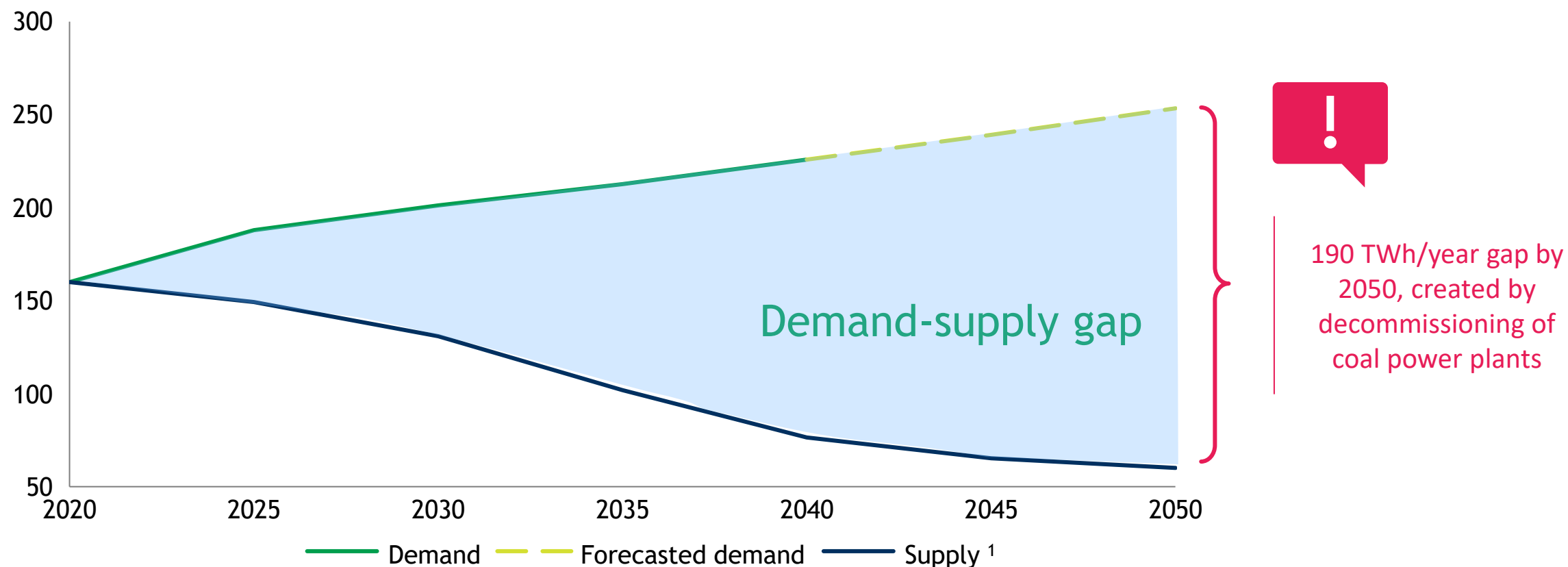
14,000 MW
of the installed capacity
will be shut down
before 2035

Source: Energoprojekt S.A. „Report on planned shutdowns and construction of new units of Centrally Dispatched Generating Units (JWCD) and CHP facilities with capacity over 120 MWt“, October 2020, report commissioned by Synthos S.A.

An investment in new capacities needed to close a 190 TWh/year electricity demand-supply gap

Forecast of Polish electricity market demand and supply (TWh).

Conservative assumption, not including growing demand from e.g. steel and petrochemical industry following decarbonisation strategy



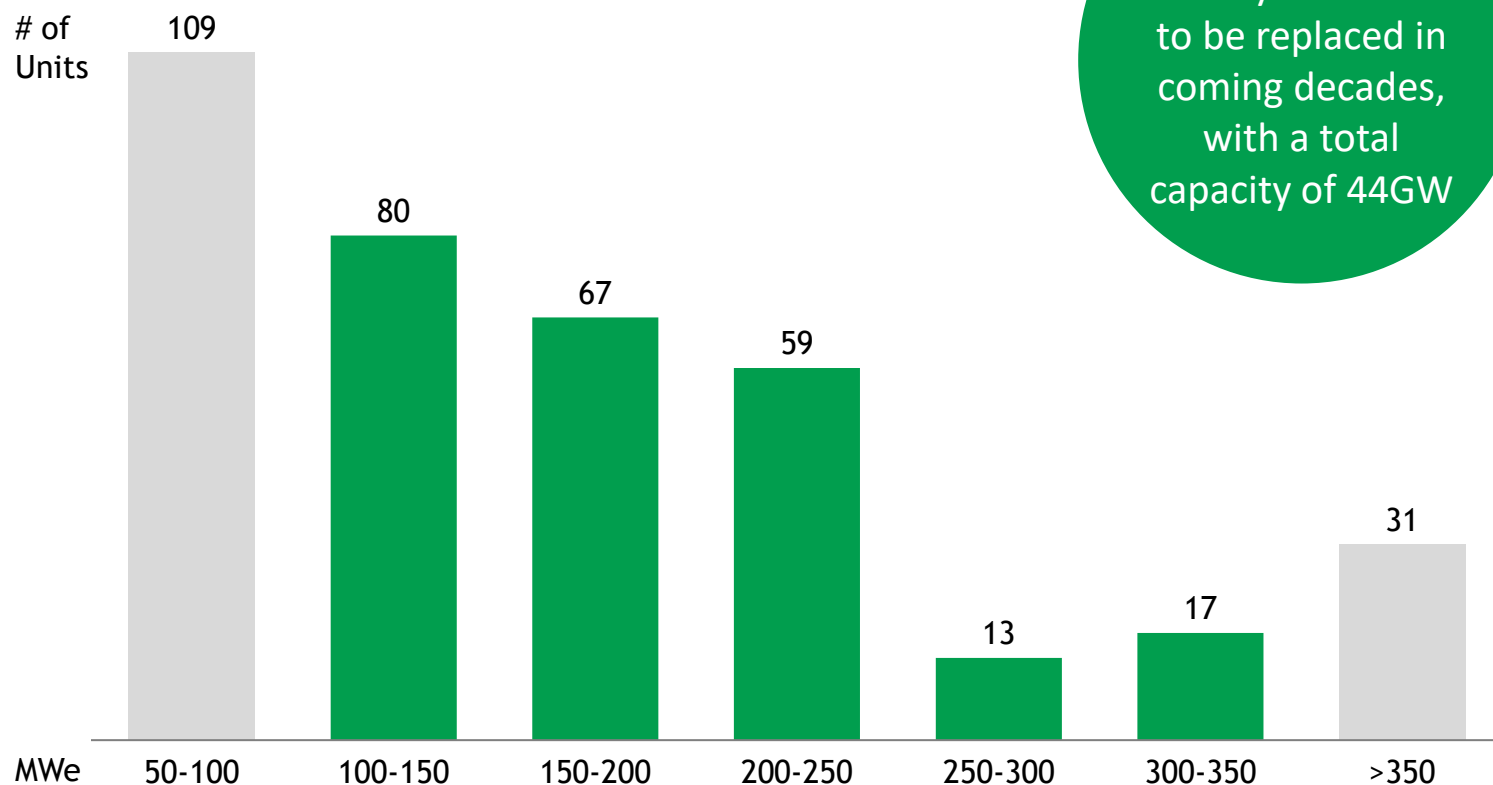
Note: Electricity demand beyond 2040 is extrapolated based on official demand projection annual 2034-2040 growth

1. Supply from units operating in 2020

Source: PEP40, PSE, BCG Analysis

SMR as a competitive solution for the replacement of coal units which will be retired in coming decades

Number of fossil-based power/heat generation units¹



200+ smaller, mostly coal units to be replaced in coming decades, with a total capacity of 44GW

SMRs fit to replace 100-350 MW fossil-based units

Many of the <350 MW units are crucial for energy generation, district heating or industrial sites

Those units can be replaced by gas units or preferably SMRs:

- Renewables cannot provide stable concentrated energy or steam in large quantities
- Large nuclear plants do not fit the site

SMR would offer an emission free, cheap and energy-independent solution

1. By equivalent el. output (MWe); only +50 MW units presented, appr. 80% of fossil-based units based on coal
Source: Bloomberg, TGE, GPI, PSE, URE, ARE, Market data

Preliminary assessment identified demand for close to 50 SMR units in Poland

Identified more than 200* smaller units that needs to be replaced ...

... after applying licensing and commercial filters...

... potential was found for 49 SMRs in 16 different locations



Number of fossil-based power/heat generation units over 200 MWe



Units based on coal and should be shut down because of its age, high emissions, unprofitability, etc.



Licensing feasibility

- Heat sink
- Population proximity
- Civil, military, national park proximity

Commercial feasibility

- Steam temperature
- Newbuild coal and gas



SMR units at 7 favorable locations

- All conditions satisfied



SMR units at 9 feasible locations

- Potential challenges in one requirement

Synthos Green Energy

Synthos Green Energy (SGE)
acts solely for the green
transformation of the
energy generation in Poland
and other CEE countries



The company has been established to
develop and implement zero-emission
technologies and electricity production from
renewable sources.

Our Partners



HITACHI



Our focus areas



Nuclear Energy (SMR and MMR)

- Strategic Partnership Agreement with GE Hitachi Nuclear Energy (BWRX-300);
- Cooperation with USNC (5 MW microreactor)

Offshore

- Plans to develop windfarms on Baltic Sea in partnership with global company

H2

- Project of innovative technology of hydrogen generation using MMR reactor submitted to the European Union IPCEI program

The Industrial Group

GREENTECH



SCITECH



FOOD & BEV



DITECH



RETAIL



Group's company operating in:



Poland



Germany



France



Czech Republic



Austria



Netherlands



Romania



United Kingdom



Ukraine



United States



Russian Federation

SMRs - the Solution for Poland

On the road to SMR fleet in Poland...

October 2019 – Michał Sołowow, no. 1 Polish industrialist, as first on the world, started cooperation with GEH regarding BWRX-300.



Michał Sołowow and Rick Perry, the then U.S. Secretary of Energy, who took part in signing Synthos-GEH agreement in Brussels.

2019

2021

October 2021 - Synthos Green Energy has agreements confirming interest to build more than **10** BWRX-300 units in Poland.



Synthos Green Energy has ambitions to play a significant role in decarbonization of Polish industry in coming years.

Our efforts to accelerate SMR development in Poland



HITACHI



synthos



- Solution development and marketing
- Project management

Technology providers

Polish Government

- Regulation enforcement
- Investment subsidies
- EU financing application



- Generate demand
- Co-investment

Partners & clients

synthos
green energy

Approving bodies

- Drive pre-licensing process



- Education of nuclear engineers
- Development of nuclear science ecosystem
- Informing society on SMR technology

Society & Academia

Other state agencies

- Funding support
- Fostering business cooperation



Grounds for success

Intensive growth of power demand

It is expected that power consumption will reach 217 TWh in 2050, while 150 TWh in 2020 (1.2% CAGR)

Coal-reliant nation

Share of hard coal and lignite in the installed capacity mix is >70%. Polish generation mix is one of the most emissive across the EU

Outdated power plants

Most of coal fired power plants are 50+ years old. Considering only lignite, 6.5 GW of capacities will have to be shut down in the coming years



Concerns of industry sector

More and more industry players start thinking about securing energy supply on their own

Large-scale nuclear power plants?

Start of operation of large NPPs, as planned by the government strategy, is highly uncertain (6-9 GW of installed capacity with PWR reactors; first ready in 2033)

16 locations for BWRX-300

Boston Consulting Group analysis indicated at least 16 locations in Poland favourable and feasible for BWRX-300 deployment

OPG decision – a remarkable milestone for SGE

OPG's decision to select BWRX-300 is a breakthrough for all the World and the decarbonisation in Poland

Regulations & Licensing

Regulations in Poland follow the Canadian. Thanks to cooperation with OPG and GEH from the beginning of the process, obtaining the building permit in Poland might be significantly accelerated

Partners & Clients

With reference unit being constructed, SGE gets arguments to take cooperations with partners and clients to the next level



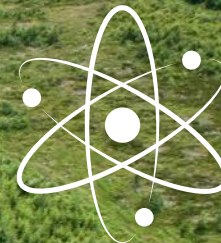
FOAK vs NOAK

As the company is not experienced in nuclear energy, the OPG's experience from reference project in Canada will be priceless for SGE

Government & Public Opinion

With Darlington investment as a FOAK, SGE in Poland gets important advocacy (on several levels: government relations, regulatory, public opinion)

**Our success will be possible also because of close cooperation with OPG and CNSC.
We will be honoured to continue our dialogue in Q1 2022.**



THANK YOU