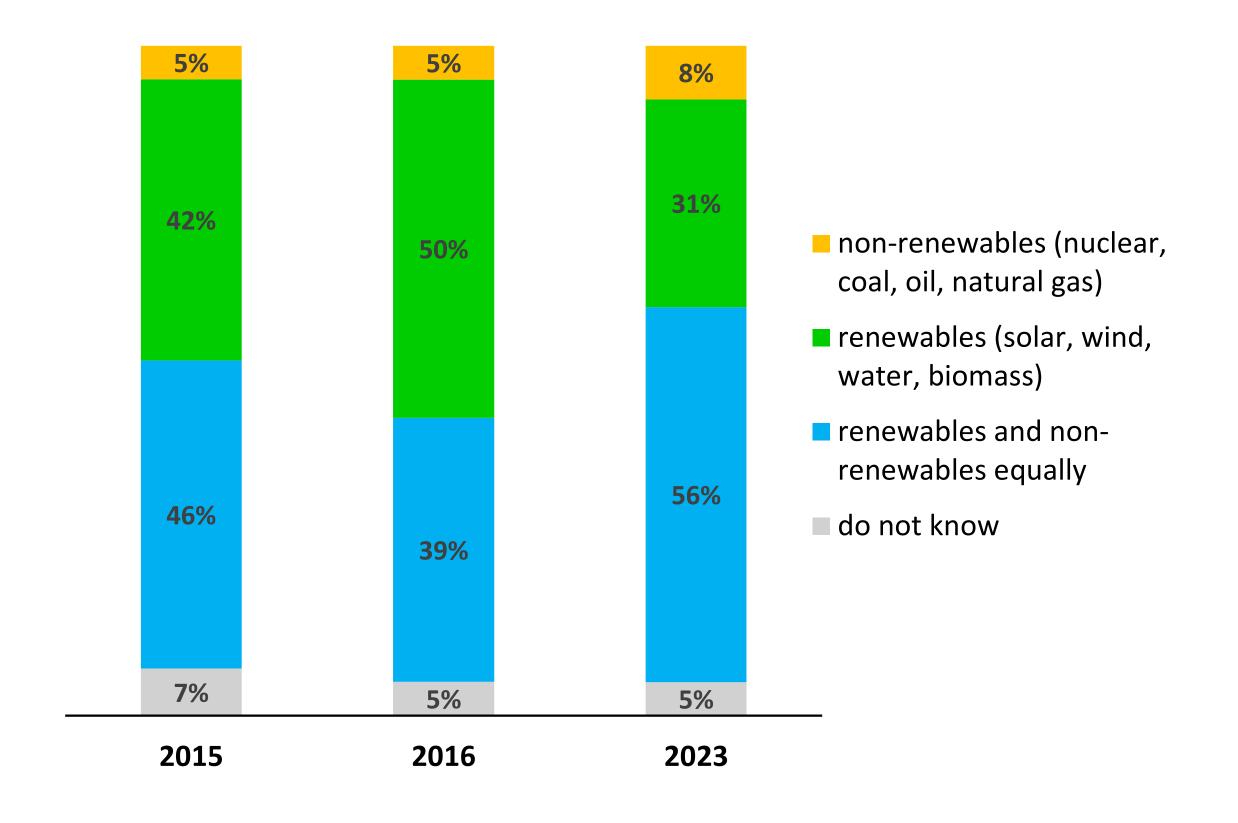
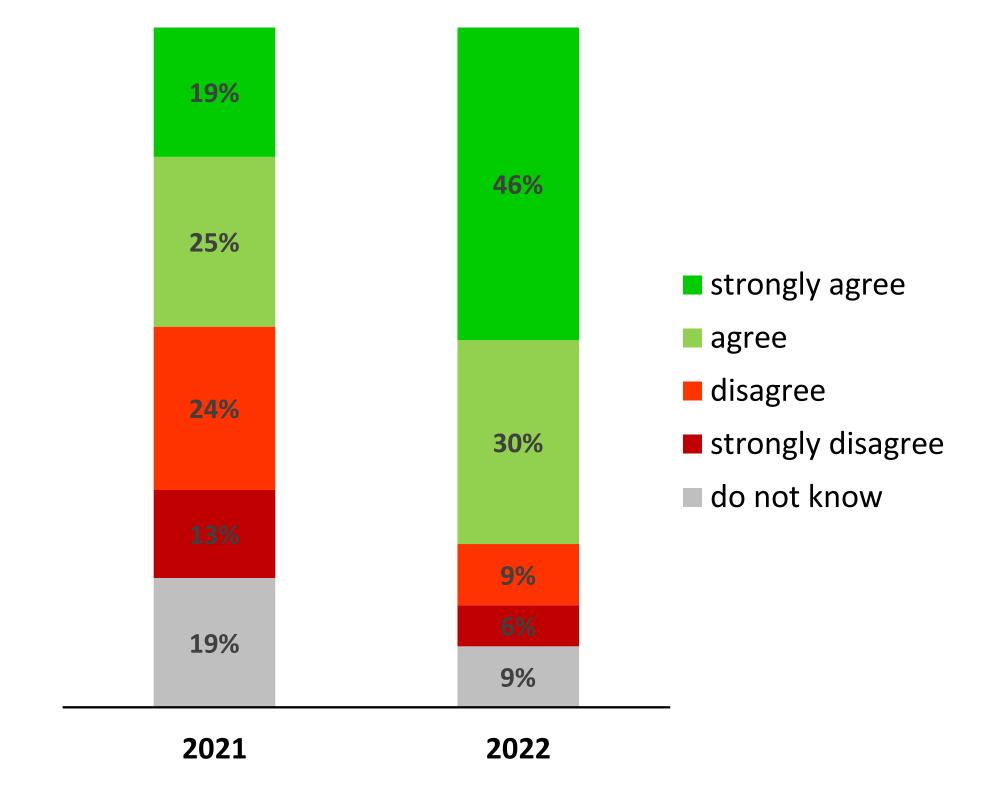




PUBLIC PERCEPTION OF ENERGY TRANSFORMATION IN POLAND





Responses to the question about the energy area to focus on; based on the statistical study by CBOS.

Responses to the question whether you agree with the statement that the development of nuclear power in Poland is necessary if we want to move away from coal-based energy; based on the statistical study by CBOS.

Source: Centrum Badania Opinii Społecznej. Postawy wobec transformacji energetycznej. Komunikat z badań, 30, 2023

Source: Centrum Badania Opinii Społecznej. Polacy o rozwoju energetyki jądrowej. Komunikat z badań, 151, 2022



PUBLIC PERCEPTION OF ENERGY TRANSFORMATION IN POLAND

Renewable energy should provide real benefits to the average resident of Poland

Renewable energy is the most modern and forwardlooking type of energy

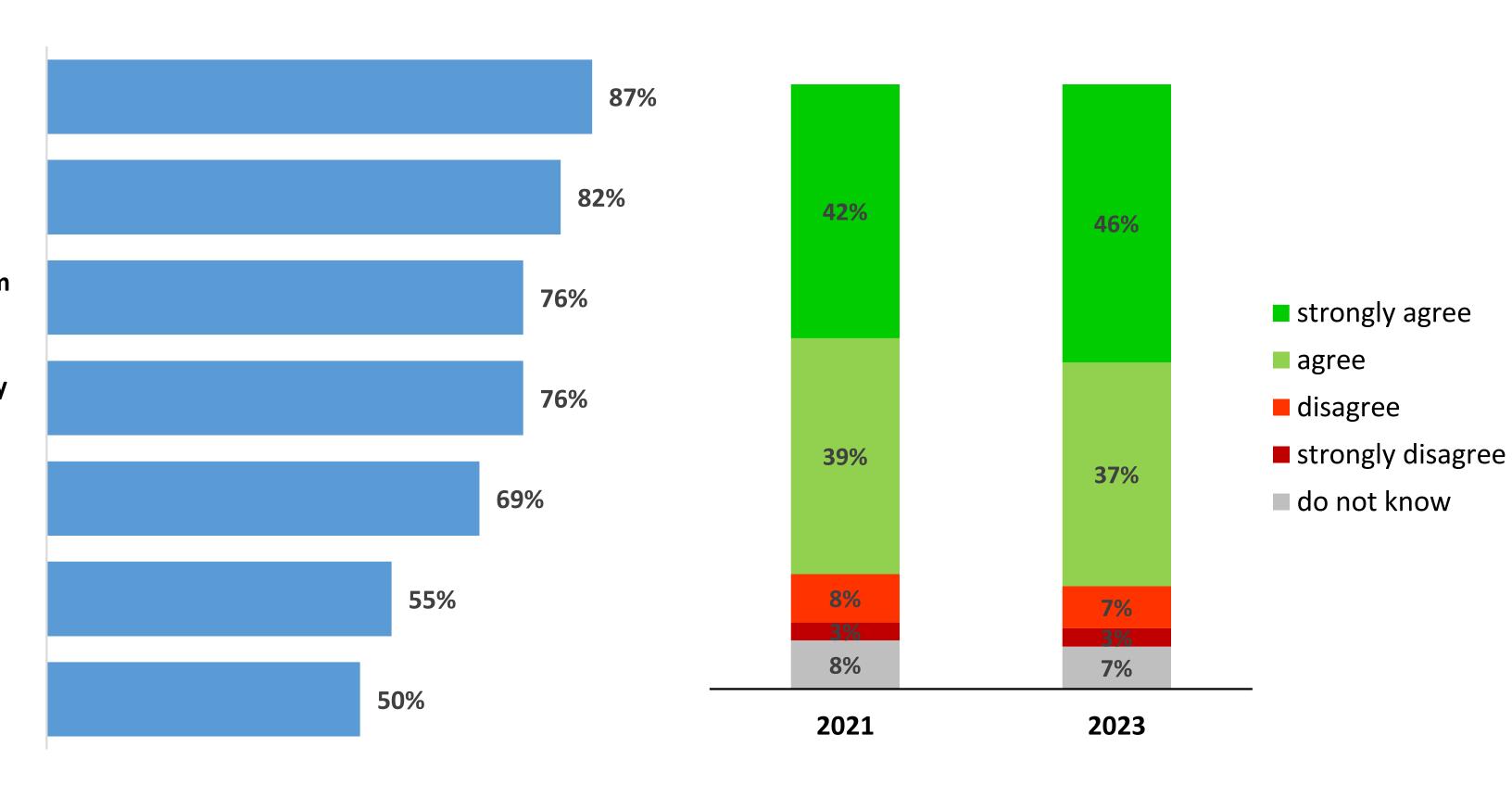
The vast majority of Poland's electricity should come from renewable sources

Renewable energy increases the country's energy security through local power generation

Renewable energy is the best way to reduce global warming

Thanks to renewable energy, Poland will become independent of importing raw materials from abroad

I am able to pay more for electricity generated from renewable sources



Percentage of people supporting given statements regarding renewable energy sources.

Responses to the question regarding support of the development of onshore wind farms in Poland; based on the statistical study by CBOS.

Source: Społeczno-kulturowe uwarunkowania rozwoju energetyki rozproszonej w Polsce. KlastER, 2021

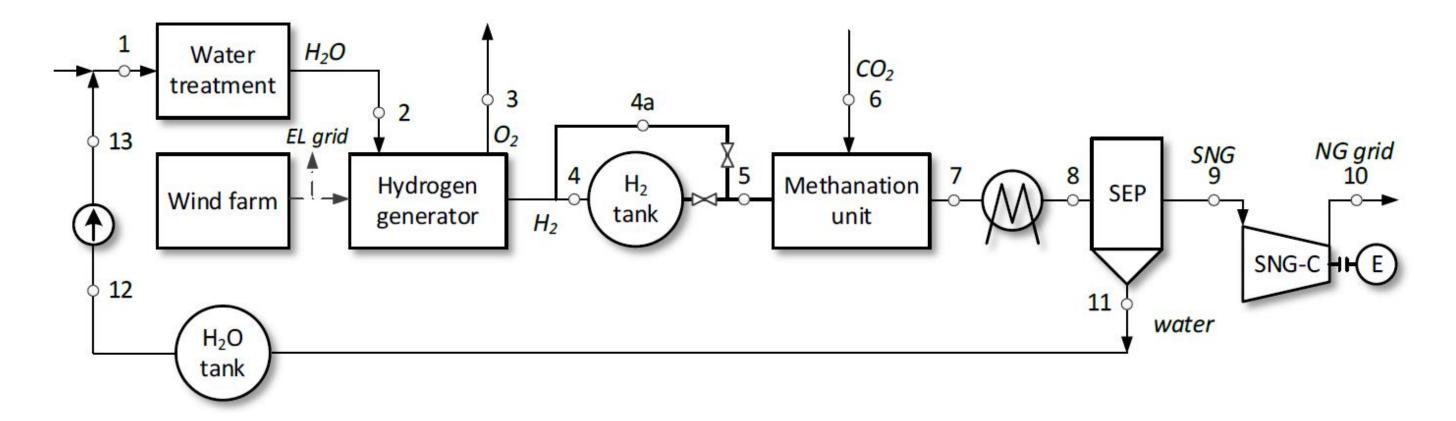
Source: Centrum Badania Opinii Społecznej. Opinie o energetyce wiatrowej. Komunikat z badań, 27, 2023



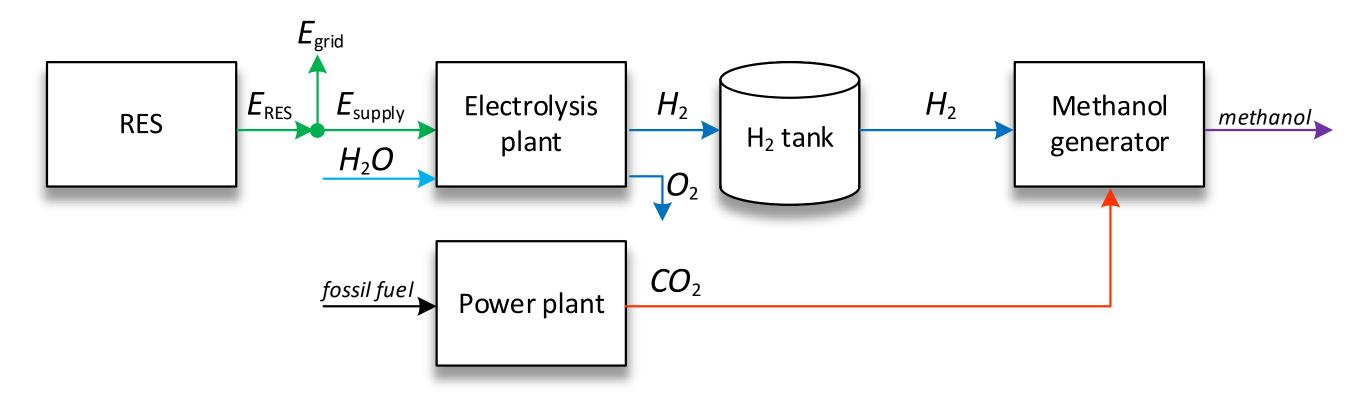
HYDROGEN ECONOMY

Renewable energy Fuel cell Energy & Transportation Combustion --- electricity — hydrogen

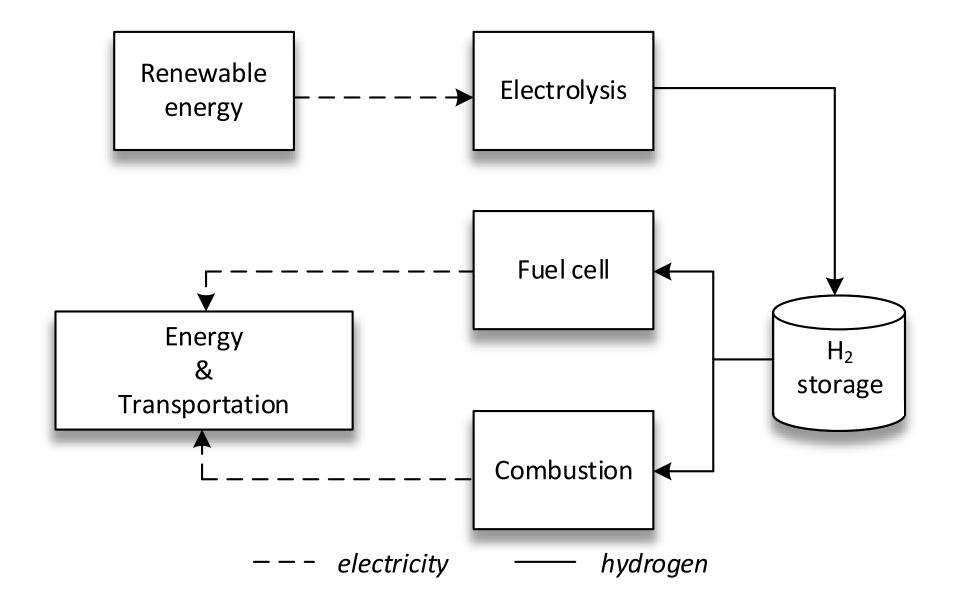
power-to-SNG

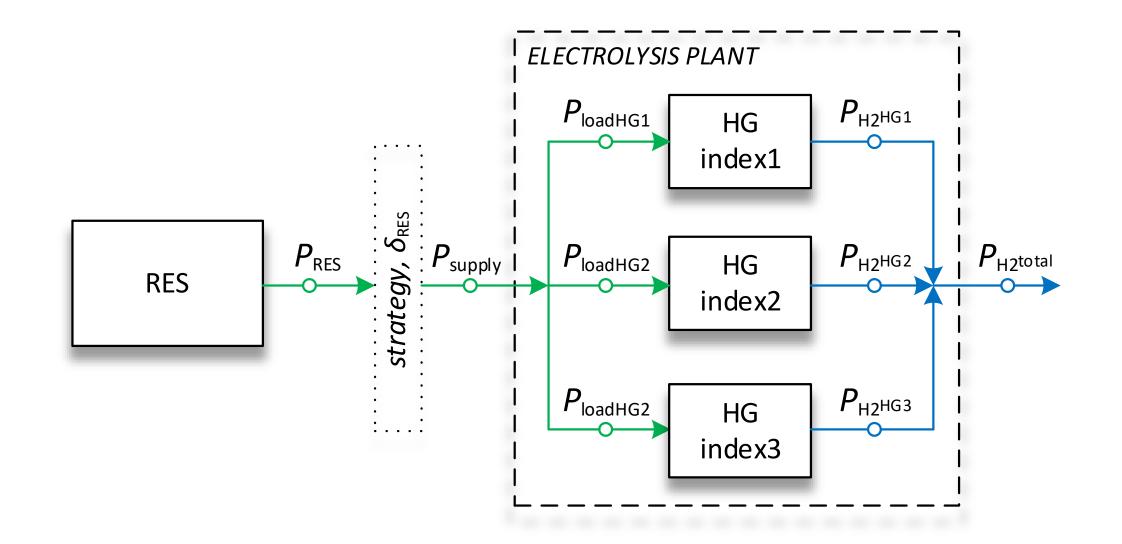


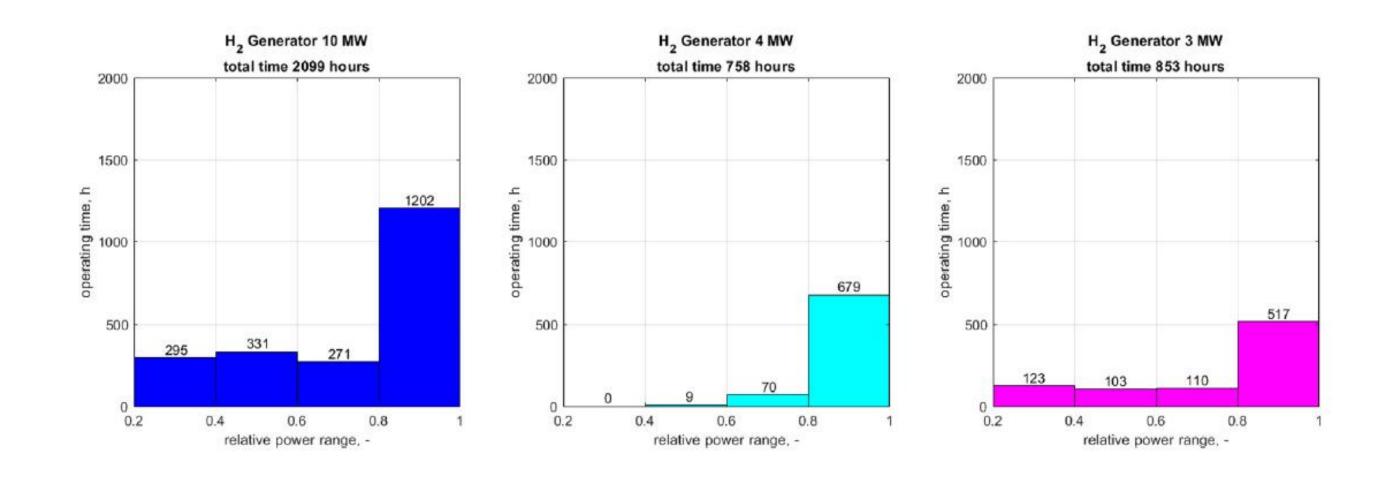
power-to-methanol



LARGE-SCALE SYSTEM PERSPECTIVE HYDROGEN ECONOMY

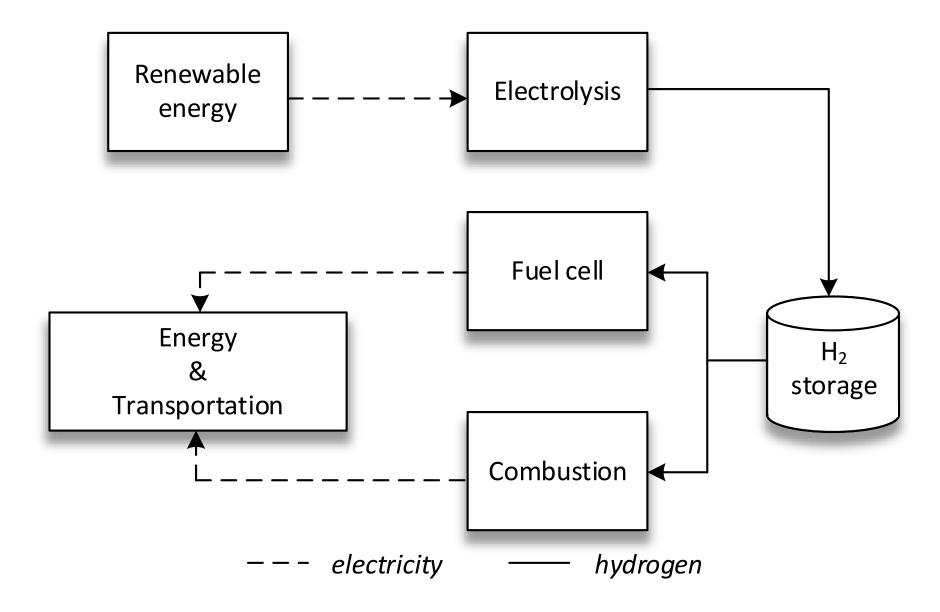


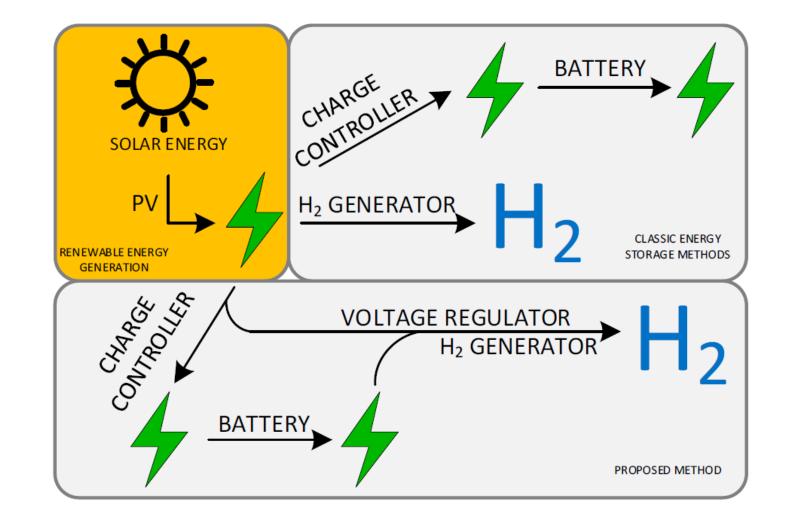


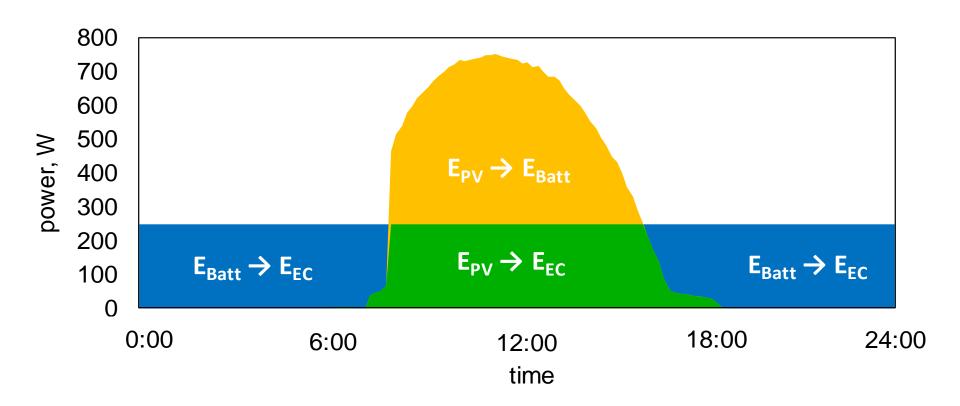




6







Hydrogen generator 3.69 1.69

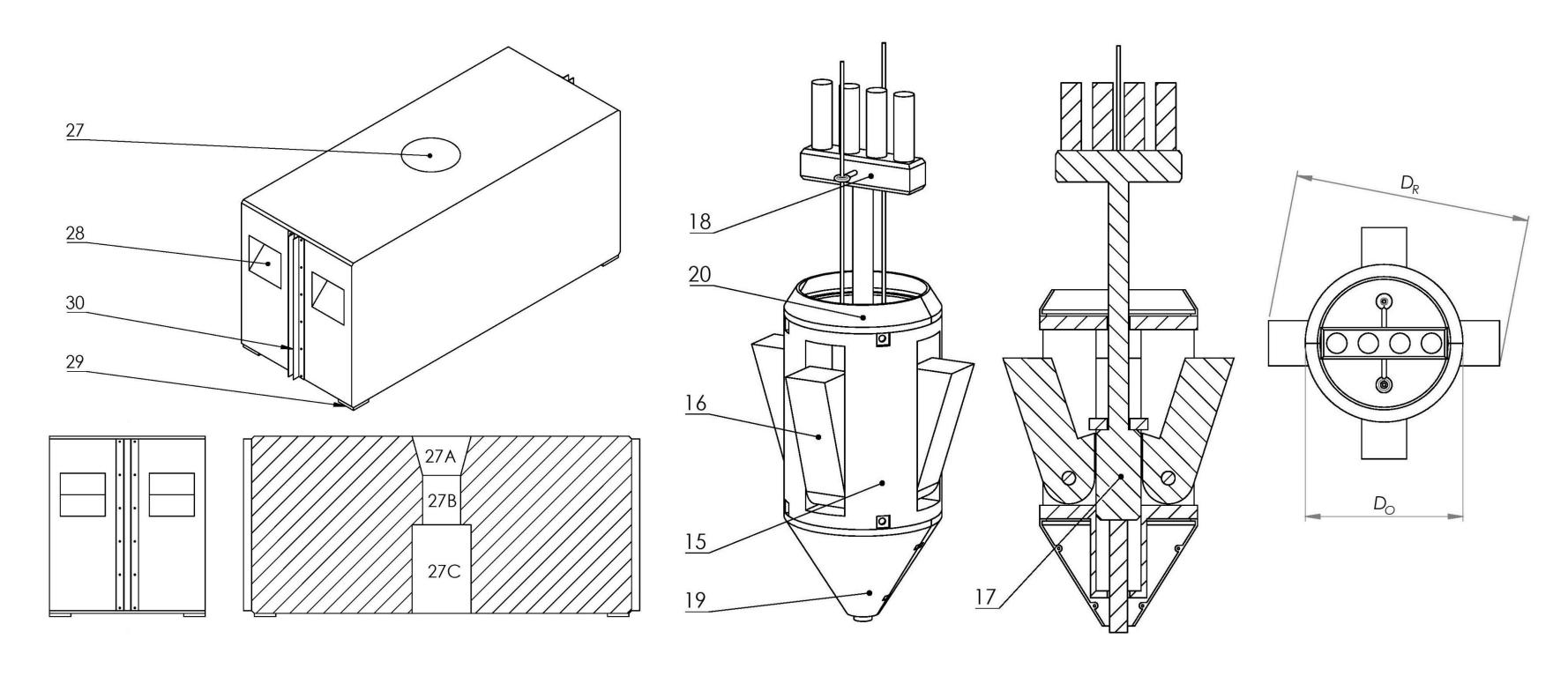
Hydrogen generator + battery

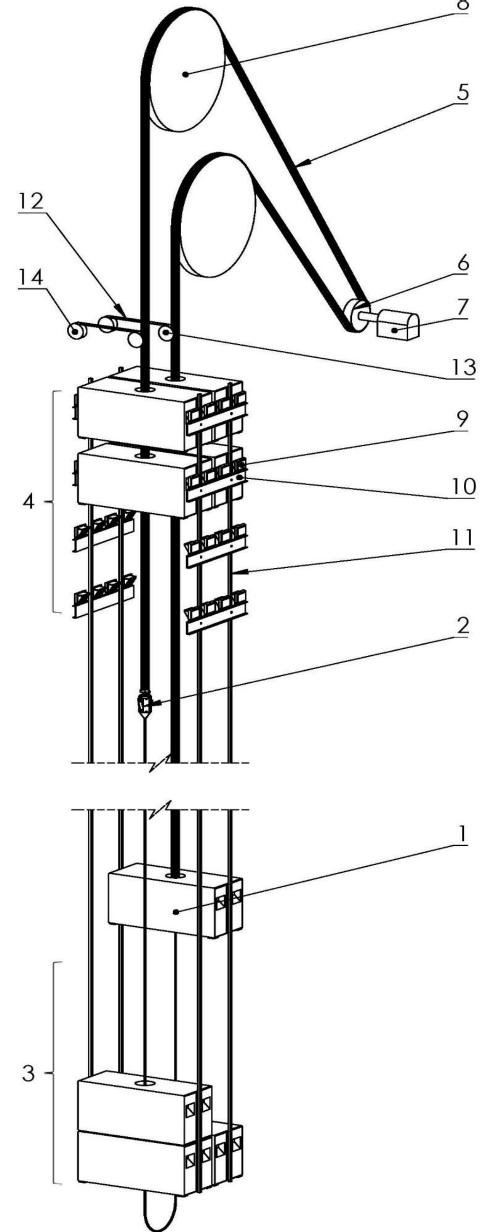
Hydrogen generator 4.18

Hydrogen generator 4.18



EXISTING INFRASTRUCTURE – POST-MINING SHAFTS



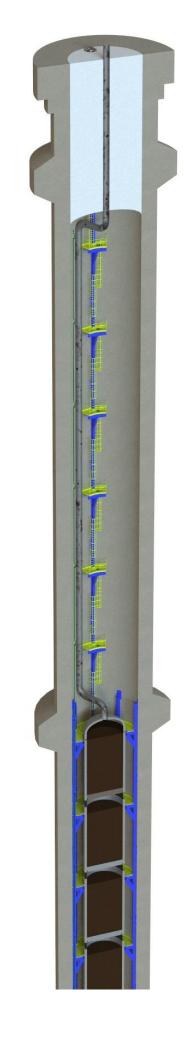


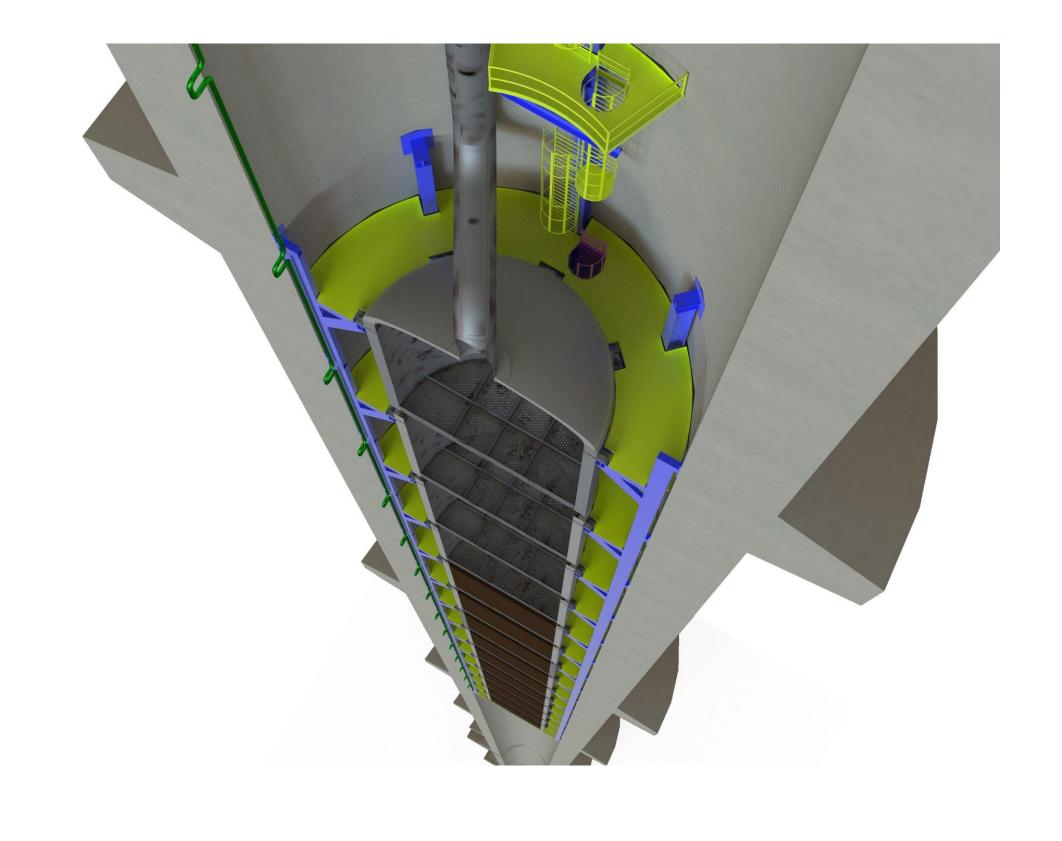
Polish patent application: P.442507



EXISTING INFRASTRUCTURE – POST-MINING SHAFTS





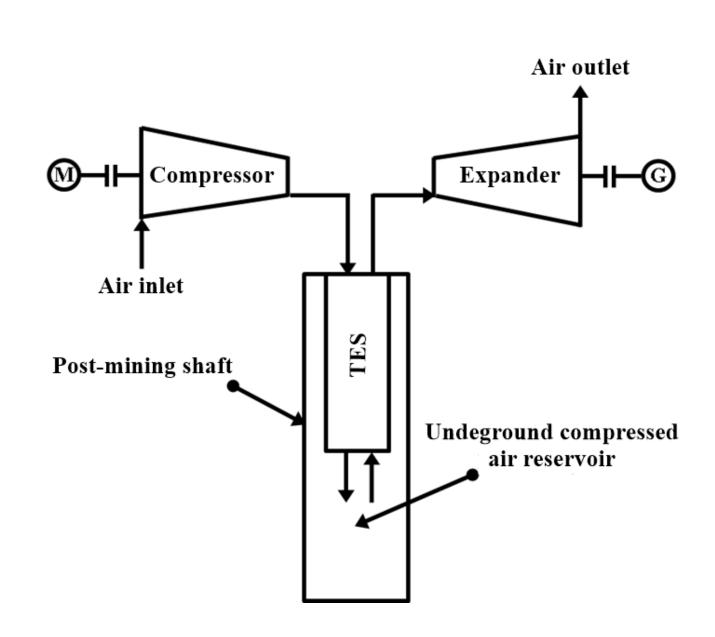


European patent EP3792467

Polish patent PL242184



EXISTING INFRASTRUCTURE – POST-MINING SHAFTS







European patent EP3792467

Polish patent PL242184



PROSUMER PERSPECTIVE

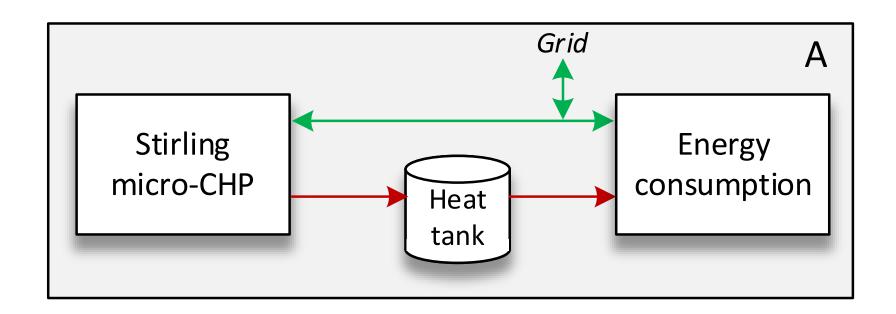
SELF - SUFFICIENCY

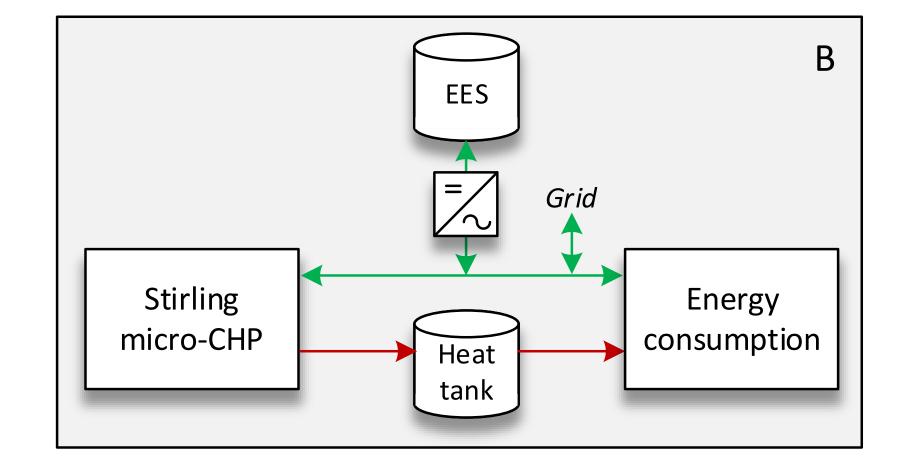
"Distributed energy is energy generation sources and **energy storage** intended for local use, connected directly or indirectly (using household installations, industrial networks, etc.) to the distribution system."

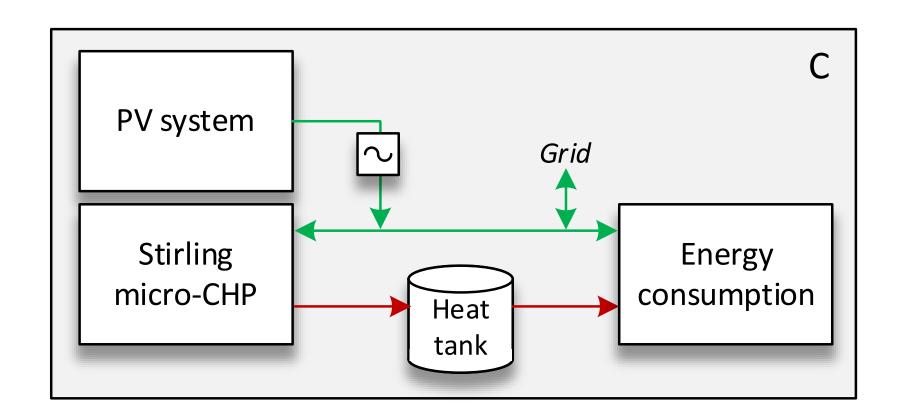
Source: "Strategy for the Development of Distributed Energy in Poland until 2040" draft

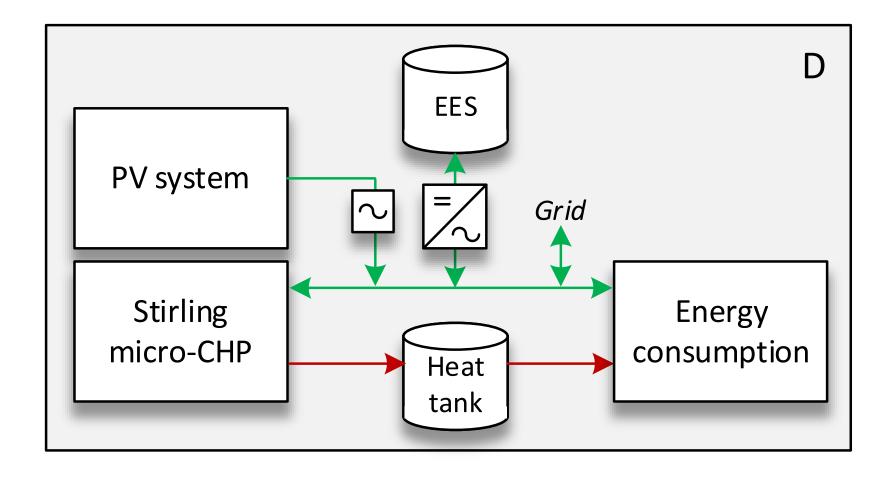


SELF - SUFFICIENCY









11

Medium scale prosumers federation $Q_{c(1)}$ PROSUMER PERSPECTIVE Micro-CHP **SELF - SUFFICIENCY** Auxiliary $Q_{\mathsf{h(1)}}$ User boiler F_{ut} $E_{u(1)}$ $F_{u(1)}$ Prime Battery mover E_{grid} E_{pd} r------ $Q_{c(2)}$ Hybrid chiller unit E_pv Micro-CHP Electric PV system chiller $Q_{h(2)}$ Auxiliary User boiler Absorption Wind farm $F_{u(2)}$ chiller Prime Battery mover $E_{gu(2)}$ $E_{ev(2)}$ Q_{tes} Electric vehicle Thermal energy storage Electrolyzer Micro-CHP Auxiliary $Q_{\mathsf{h(i)}}$ User boiler Fuel cell H₂ tank generator $F_{u(i)}$ Prime |-----| Battery mover



ACKNOWLEDGMENTS

The European University on Responsible Consumption and Production is supported by the European Union via different project funding. EURECA-PRO phase I 2020-2023 is co-funded by the Erasmus+ Programme of the European Union. The Research and Innovation dimension of EURECA-PRO has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No 101035798.

EURECA-PRO is also supported at a national level by: the Federal Ministry of Education, Science and Research and the Austrian Academic Exchange Service OeAD (Austria); the Federal Ministry of Education and Research and the German Academic Exchange Service DAAD (Germany); the Ministry of Education (Greece); the Ministry of Education and Science (Poland), the Ministry of Education (Romania), the Ministry of the Presidency Relations with the Courts and Democratic Memory and the Strategic Subsidy Plan 2021-2023 of the Ministry of Universities (Spain).

"The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein."





THANK YOU

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