Krajowy Punkt Kontaktowy
PROGRAMÓW BADAWCZYCH UE

HORYZONT 2020
Efektywność energetyczna i gospodarka niskowęglowa w obszarach NMP i Środowisko

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W niniejszej prezentacji wykorzystano materiały udostępnione m.in. przez KE i/lub Ministerstwa oraz Agendy RP

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Partnerstwa Publiczno-Prywatne (PPPs) :

Potężne narzędzie do realizacji innowacji i wzrostu w Europie

PPP są

- odpowiedzią na propozycję **połączenia sił sektora prywatnego z państwami członkowskimi** w celu osiągnięcia **wyników wykraczających** poza możliwości **pojedynczej** jednostki /państwa
- **Potężnym źródłem finansowania (22 mld €) długoterminowych i ryzykownych inicjatyw** zapewniających wiodącą pozycję UE w strategicznych, konkurencyjnych sektorach technologii na całym świecie:
  - **8 mld €** z programu Horyzont 2020
  - **10 mld €** z przemysłu
  - **4 mld €** z państw członkowskich
- **W 7PR , wkład unijny we Wspólne Inicjatywy Technologiczne (JTI)** wyniósł **3,12 mld €**, a inwestycje przemysłu osiągnęły poziom **4,66 mld €**
- Oczekuje się, że 5 WIT zmobilizuje inwestycje o łącznej wartości ponad **17 mld €** , z czego **wkład budżetu UE** wyniesie do **6,4 mld €**

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Partnerstwa Publiczno-Prywatne (PPPs) - założenia

- **Wiodąca rola przemysłu** przy definiowaniu priorytetów badawczych
- **Predefiniowany budżet** inicjatyw
- Koncentracja na **prorozwojowych technologiach przemysłowych**
- Rosnąca rola instrumentów zorientowanych na **MŚP oraz demonstracji**

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PPP w H2020

Wspólne Inicjatywy Technologiczne *(Joint Technology Initiatives – JTI):*

- ECSEL – Electronic Components and Systems for European Leadership
- IMI 2 – Innovative Medicines Initiative 2
- Clean Sky 2
- Bio-based industries
- FCH 2 – Fuel Cells and Hydrogen

PPP kontraktowe *(Contractual PPP):*

- Factories of the Future
- Energy-efficient Buildings
- Green Vehicles
- Future Internet
- Sustainable Process Industry
- Robotics
- Photonics
- High Performance Computing

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Inicjatywa SPIRE

SPIRE is an European **Public-Private Partnership** (PPP) dedicated to **innovation in resource and energy efficiency** and enabled by the **process industries**

SPIRE is addressing **three fundamental European challenges**:

- urgency to **create growth** and **increase the competitiveness** of Europe in a global market,
- need to **rejuvenate the European process industry**
- imperative to **reduce resource and energy inefficiency** and the **environmental impact** of **industrial activities**

SPIRE ambitions for 2030

- Reducing fossil energy intensity by up to 30% from current levels
- Reducing non-renewable, primary raw material intensity by up to 20% from current levels
- improvement in CO2-equivalent footprints of up to 40% by 2030.

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Inicjatywa SPIRE

Members

INDUSTRIES | RESEARCH | ASSOCIATIONS

AkzoNobel	ArcelorMittal	Arkema	BASF	Bayer
Britest	CEMEX	Clariant	CMI	Cynar PLC
Dow	DSM	Elkem	Emerson	EVONIK
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Hydro	INEOS Group AG	Kauno Jiesia	Lafarge	Lanxess
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Solutex	SOLVAY	Supren	Tata Steel	Tenaris
TERRA S.A.	Terreal	ThyssenKrupp Steel Europe	Voestalpine	

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Konkurs H2020-SPIRE-2015

SPIRE-06-2015: **Energy** and resource **management systems** for improved **efficiency** in the process industries

SPIRE-08-2015: **Solids handling** for intensified process technology

SPIRE-05-2015: New adaptable **catalytic reactor methodologies** for Process Intensification

SPIRE-07-2015: **Recovery** technologies for metals and other minerals

Deadline **2014-12-09**
Budget: **77M€**

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Inicjatywa SPIRE

SPIRE-06-2015: **Energy** and resource **management systems** for improved **efficiency** in the process industries

- **General cross-sectorial interaction** for a major impact within the process industry
- **The integration into a single management system** of a broad variety of technologies (fundamental science, plant engineering, management)
- **Analysis and optimisation tools** for flexible energy use and material flow integration
- **New approaches** that perform **cost-saving optimisation** of energy and resources supply and demand
- **Reduction** of the **overall costs** in energy intensive industries by **at least 15%**

EU contribution: **3-6 M€** Type of action: **R&I Actions**

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Inicjatywa SPIRE

SPIRE-08-2015: **Solids handling** for intensified process technology

- Development of methods for **the handling of solids in continuous production units**
- **whole process design** should be considered, in particular **downstream processing** operations such as catalyst recycling, solids isolation, waste treatment, or waste prevention.
- **Case studies** should be included

EU contribution: **6-10 M€** Type of action: **Innovation Actions**

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Inicjatywa SPIRE

SPIRE-05-2015: New adaptable **catalytic reactor methodologies** for Process Intensification

- New adaptable **reactor concepts** to reduce the number of process steps and unit operations for industrially relevant processes, **including** the **design of** the corresponding **reactor equipment**
- New adaptable catalytic schemes or reactors and processes allowing for operation at high pressure and/or temperature
- Reduction of at **least 15%** in process **energy** intensity, material **resource use** and **emissions**

TRL 3-5; EU contrib.: **3-5 M€** Type: **R&I Actions**

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SPIRE-07-2015: **Recovery** technologies for metals and other minerals

- Major improvements in **separation processes**, **cost-effective** way to achieve major improvements in the **efficiency** of recovery operations for metals and other minerals
- potential for **integration in the current industrial scenario**, and suitable for **different sectors** in the process industry
- **40% increase** in recovery of materials suitable for reprocessing

TRL 5-7; EU contrib.: **6-10 M€** Type: **InnovationActions**

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Inicjatywa EEB

Contractual PPP on Energy-efficient Buildings aims to develop affordable **breakthrough** technologies and solutions at **building and district scale**, facilitating the **road towards future smart cities.**

- Development of **innovative construction and retrofitting** technologies;
- Definition of the **research priorities** in close collaboration with the EU construction sector;
- **New market** opportunities for EU companies;
- **New jobs** for high skilled EU professionals.

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Inicjatywa EEB

Konkurs H2020-EeB-2015

EeB-05-2015: Innovative **design tools for refurbishing** of buildings at **district level**

EeB-06-2015: Integrated solutions of **thermal energy storage** for building applications

EeB-08-2015: Integrated approach to **retrofitting of residential buildings**

EeB-07-2015: New tools and methodologies to **reduce the gap** between **predicted and actual energy performances** at the level of buildings and blocks of buildings

Deadline **2014-12-09**
Budget **€64,000,000**

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Inicjatywa EEB

EeB-05-2015: Innovative **design tools for refurbishing** of buildings at **district level**

- **design at buildings and district level**, **taking into account the adjacent systems** such as district heating/cooling and decentralised thermal energy generation and other interactions with the neighbourhood, giving priority to local **renewable resources**
- **validation actions** on a **technical** level, which apply the tools on refurbishment projects and on a **societal** level
- **Optimised design** of integrated energy-efficient buildings, considering **the different physical dimensions** in a coupled and holistic way (energy, comfort, air quality, acoustics etc.)

TRL **5-7** EU contr. **4-7M€** Type of action: **IA**

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Inicjatywa EEB

EeB-06-2015: Integrated solutions of **thermal energy storage** for building applications

- **advanced solutions** that reduce thermal losses, pressure drops, and improve heat exchange in and between storage material and heat carrier
- **higher efficiency** and effectiveness of thermal energy storage of at least **6 times** the energy storage density **of water**
- advanced **energy management**
- **Small scale demonstration** of the technical and economic feasibility at the level of components and systems
- potential to **reduce the net energy consumption** of a building by **at least 15%** and a have **return-on-investment** period below **10 years**

TRL **4-6** EU contr. **3-6M€** Type of action: R&**IA**

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Inicjatywa EEB

EeB-08-2015: Integrated approach to **retrofitting of residential buildings**

- **Systemic approaches** which integrate the most promising cost-effective **technologies** and **materials**
- combination and synergy of **envelope improvements** and **space heating** and **Domestic Hot Water** (DHW)
- The **district scale**, the **interactions** between the **buildings** and the **thermal** and **electrical energy networks**
- Reduction of at least 60% in energy consumption compared to the values before renovation.
- Return on investment should be below 7 years

TRL **5-7** EU contr. **4-7M€** Type of action: **IA**

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Inicjatywa EEB

EeB-07-2015: New tools and methodologies to **reduce the gap** between **predicted and actual energy performances** at the level of buildings and blocks of buildings

- Focus on methodologies and tools to monitor and assess actual building energy performance at building level
- A holistic “open” approach to building control and monitoring systems
- Real time optimisation of energy demand and supply at the level of a block of buildings

TRL **5-7** EU contr. **4-7M€** Type of action: **IA**

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Inicjatywa SILC II

H2020-SILC-II-2014

Deadline: **2014-09-02**
Budget: **20M€**

SILC-II-2014: Sustainable Industry Low Carbon II

- research and innovation activities for innovative, cost-effective technologies in order to **reduce the GHG emission**
- focus on **energy-intensive industries**
- **breakthrough solutions** and implementation of **demonstration** programmes, ***including in real industrial environments***
- Economically viable solutions and technologies allowing an ambitious **reduction in specific GHG emission** intensity of **at least 35%**

TRL **4-7** EU contr. **5-10M€** Type of action: **IA**

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NMP+B – obszary tematyczne na 2014-15

Call for Nanotechnologies, Adv. Materials and Production

Nanotechnology and Advanced Materials for low-carbon energy technologies and Energy Efficiency

NMP 17 - 2014: **Post-lithium ion batteries** for electric automotive applications; TRL 5; R&IA

NMP 14 - 2015: **ERA-NET** on Materials (including Materials for Energy)

NMP 15 - 2015: Materials innovations for the optimisation of **cooling in power plants;** TRL 6; IA , Two-stage

NMP 16 - 2015: **Extended in-service life** of advanced functional materials **in energy technologies** (capture, conversion, storage and/or transmission of energy); TRL 6; IA , Two-stage

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NMP+B – obszary tematyczne na 2014-15

NMP 15 - 2015: Materials innovations for the optimisation of **cooling in power plants;** TRL 6; IA , Two-stage

- develop robust **materials solutions for optimising cooling in thermal power plants** (higher temperatures, alternative cooling fluids, effective water supply)
- Topic addressed to plants fired by **coal**, **natural gas**, liquid **fossil fuels**, as well as **geothermal** and **solar thermal** plants

TRL 6; IA , Two-stage, 6-10M€

Deadline Date: 2015-03-26

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NMP+B – obszary tematyczne na 2014-15

NMP 16 - 2015: **Extended in-service life** of advanced functional materials **in energy technologies** (capture, conversion, storage and/or transmission of energy);

- investigate the **long-term in-service degradation** of functional materials that **have already demonstrated enhanced performance** in terms of energy capture, conversion, storage and/or transmission
- improving the **practical understanding** of long-term in-service degradation on the performance of the functional material and its **impact on the overall performance** of the technology components and systems.

TRL 6; IA , Two-stage, 6-10M€

Deadline Date: 2015-03-26

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NMP+B – obszary tematyczne na 2014-15

Call for Nanotechnologies, Adv. Materials and Production

Exploiting the cross-sector potential of Nanotechnologies and Advanced materials to drive competitiveness and sustainability

NMP 19 - 2015: Materials for severe operating conditions, including added-value functionalities; TRL 5; R&IA , Two-stage

NMP 24 - 2015: Low-energy solutions for **drinking water production;** TRL 4-7; IA , Two-stage

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(3) Call – Growing a low carbon, resource efficient economy with a sustainable supply of raw materials

3.1) FIGHTING AND ADAPTING TO CLIMATE CHANGE

SC5-4-2015: Improving the air quality and reducing the carbon footprint of European cities

Research and innovation actions (2-etapowy)

***Udział KE* – 6-8 mln E**

Cel - m.in:

- Rozwój technologii i strategii redukcji zanieczyszczenia powietrza w środowisku miejskim;
- Integracja nowoczesnych narzędzi dla oceny i monitoringu zanieczyszczenia powietrza;
- Włączenie działań na rzecz wspomagania polityki środowiskowej;
- Szerzenie świadomości społecznej w tym zakresie;
- Redukcja niekorzystnego działania zanieczyszczeń na zdrowie człowieka i klimat

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Dziękuję za uwagę

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