



AGH UNIVERSITY OF SCIENCE  
AND TECHNOLOGY



# On the implementation of the innovation triangle in the Polish Node within the KIC-InnoEnergy Consortium

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# Agenda

1. Introduction. Kraków, AGH
2. KIC goals and concept
3. KIC partners, structure and activities
4. CC PolandPlus and implementation of KIC concept
5. Conclusions

# Poland - KRAKÓW



**Kraków**  
former capital  
of Poland



**The former capital, now a center of science, art, culture, and higher education**

**over 220 000 students**



# AGH University of Science and Technology

**Technical University, founded in 1919  
as the Academy of Mining**

**Rapid growth in the 20s, after the  
World War II (University of Mining  
and Metallurgy), and in 90s**



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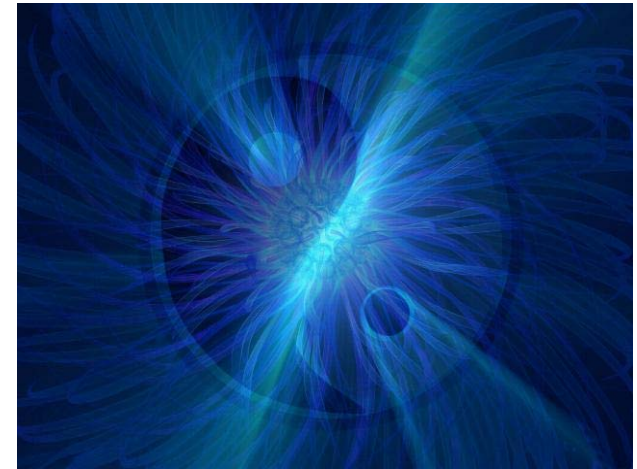


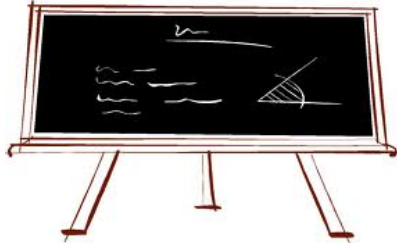
- **One of the oldest and biggest Polish technical universities**
- **15 faculties, 32 specializations, more than 160 fields of engineering**
- **Over 35 000 students**
- **2 100 researchers including more than 500 associate and full professors**
- **Own attended campus area**
- **~ 50% of the budget from projects**



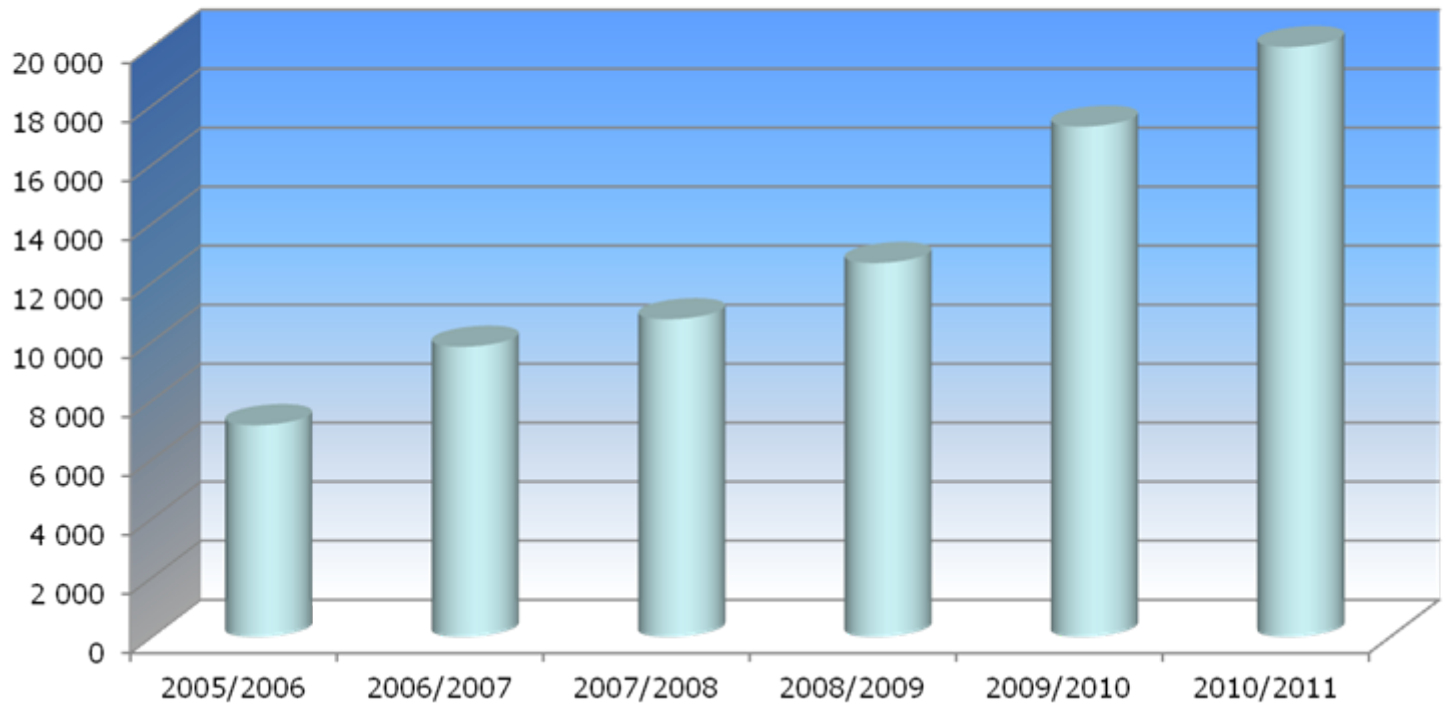


1. Faculty of Mining and Geo-engineering
2. Faculty of Metals Engineering and Industrial Computer Science
3. Faculty of Electrical Engineering, Automatics, Computer Science, and Electronics
4. Faculty of Mechanical Engineering and Robotics
5. Faculty of Geology, Geophysics and Environmental Protection
6. Faculty of Mining Surveying and Environmental Engineering
7. Faculty of Materials Science and Ceramics
8. Faculty of Foundry Engineering
9. Faculty of Non-Ferrous Metals
10. Faculty of Drilling, Oil and Gas
11. Faculty of Management
12. Faculty of Energy and Fuels
13. Faculty of Physics and Applied Computer Science
14. Faculty of Applied Mathematics
15. Faculty of Humanities
  
16. Interfaculty School of Biomedical Engineering





## Number of candidates for regular studies at AGH





# R&D Activities

## Information Technology

Computer Science  
Telecommunications  
Electronics

## Electrical and Mechanical Engineering

Electrical Engineering  
Mechanics, Construction and Operation of Machines  
Automatics and Robotics  
Mechatronics

## Mining

Mining Technologies  
Management of Energy Resources  
Oil and Gas Engineering  
Geotechnology and Building Engineering

## Social-Economic Sciences and Humanities

Management and Marketing  
Economics  
Information Society  
Sociology, Psychology and Philosophy  
Political and Historical Sciences



## Energy and its Supplies

Energy Technologies  
Renewable Sources of Energy

## Environment and Climate Changes

Environmental Engineering  
Environmental Protection  
Natural Resources and Waste Management  
Balanced Development

## New Materials and Technologies

Nanotechnologies  
Materials Science and Materials Technologies  
Metals Engineering  
Biomedical Engineering



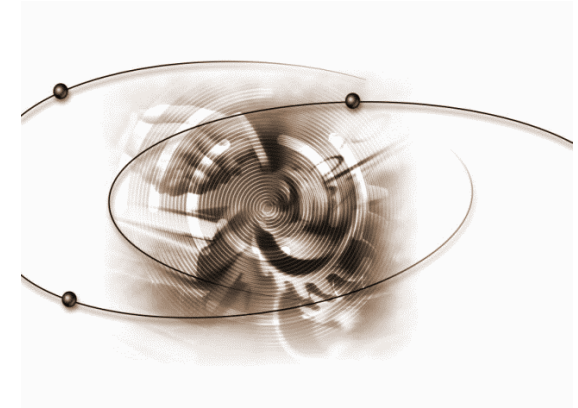
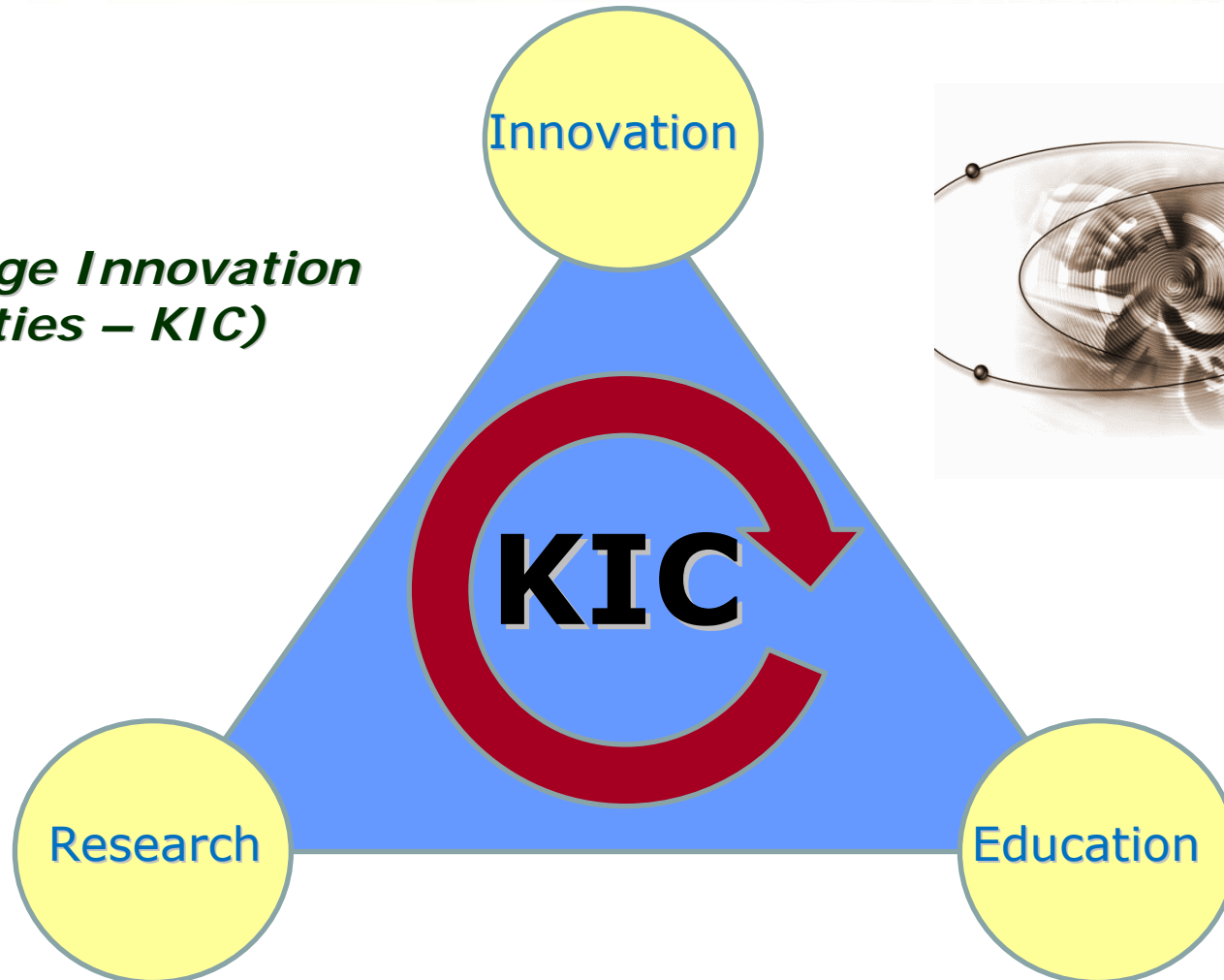
## Exact and Natural Sciences

Mathematics  
Physics  
Chemistry  
Geodesy  
Geology and Geophysics

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# KIC goals and concept

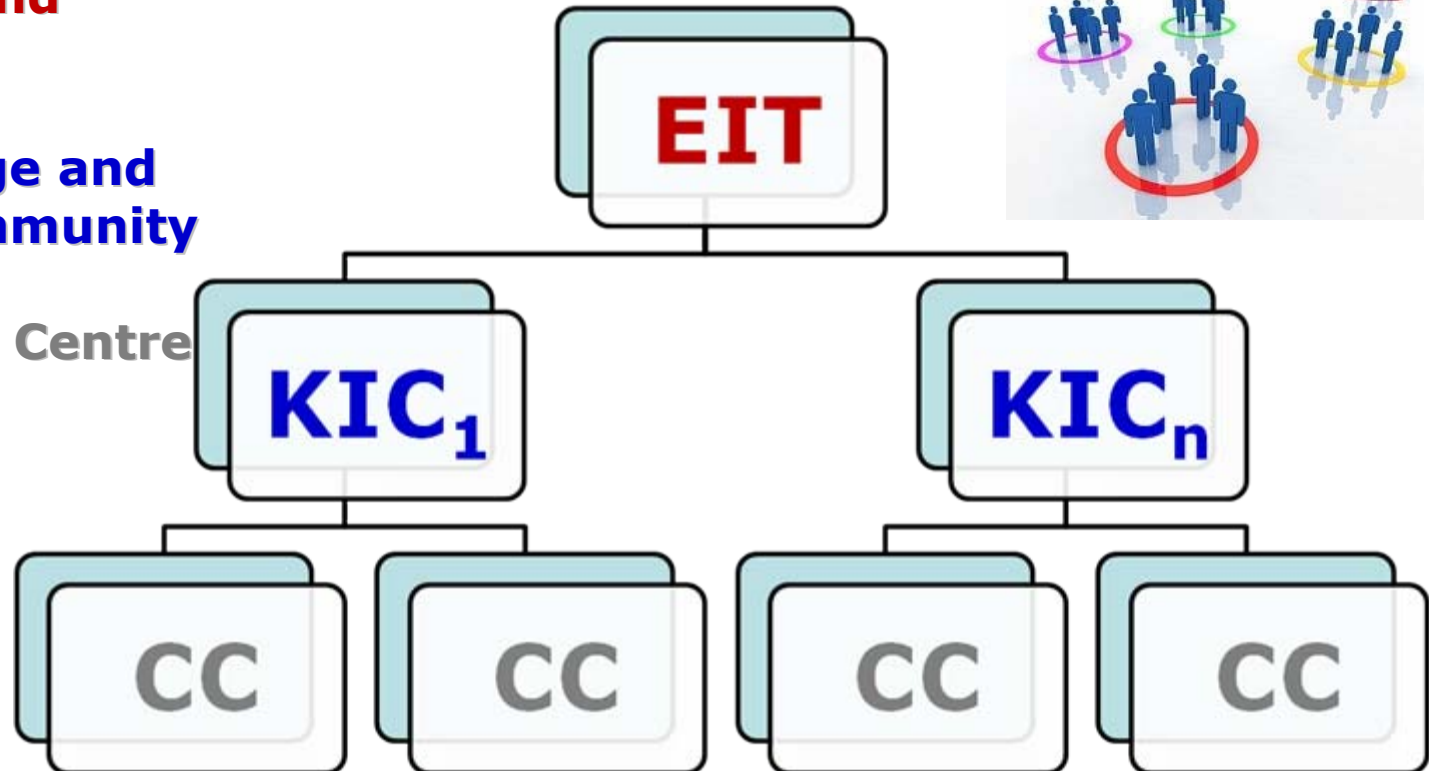
*(Knowledge Innovation Communities – KIC)*



**EIT – European Institute  
of Innovation and  
Technology**

**KIC – Knowledge and  
Innovation Community**

**CC – Colocation Centre**



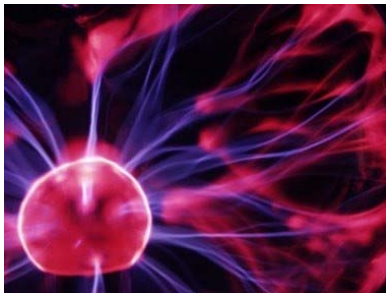
### Areas:

**1. Sustainable Energy**

**2. Climate Changes Adaptation and Mitigation**

**3. Future ICT Society**

**Submissions until 27 August 2009, 5 p.m.**



- **Sustainable Energy: KIC InnoEnergy**  
<http://eit.europa.eu/kics1/kic-innoenergy.html>;
- **Climate Changes Mitigation and Adaptation: Climate-KIC**  
[http://eit.europa.eu/fileadmin/Content/Downloads/PDF/news\\_items/Summary\\_Climate-KIC.pdf](http://eit.europa.eu/fileadmin/Content/Downloads/PDF/news_items/Summary_Climate-KIC.pdf);
- **Future ICT Society: EIT ICT Labs**  
[http://eit.europa.eu/fileadmin/Content/Downloads/PDF/news\\_items/Summary\\_EIT\\_ICT\\_Labs.pdf](http://eit.europa.eu/fileadmin/Content/Downloads/PDF/news_items/Summary_EIT_ICT_Labs.pdf).





# KIC-InnoEnergy





# KIC InnoEnergy is committed to change the European energy system through innovation

## WHY?

- Challenge of sustainable and low carbon energy supply
- Closing the innovation gap in Europe

## WHO?

- World class alliance of top European players with a proven track record

## WHAT?

- Whole energy-mix solution coherent with SET Plan
- Practical approach to integrate the knowledge triangle

## HOW?

- Business-like organization
  - Lean and effective governance structure
  - Sound and monitored business plan with specified goals (KPIs)

## WHEN?

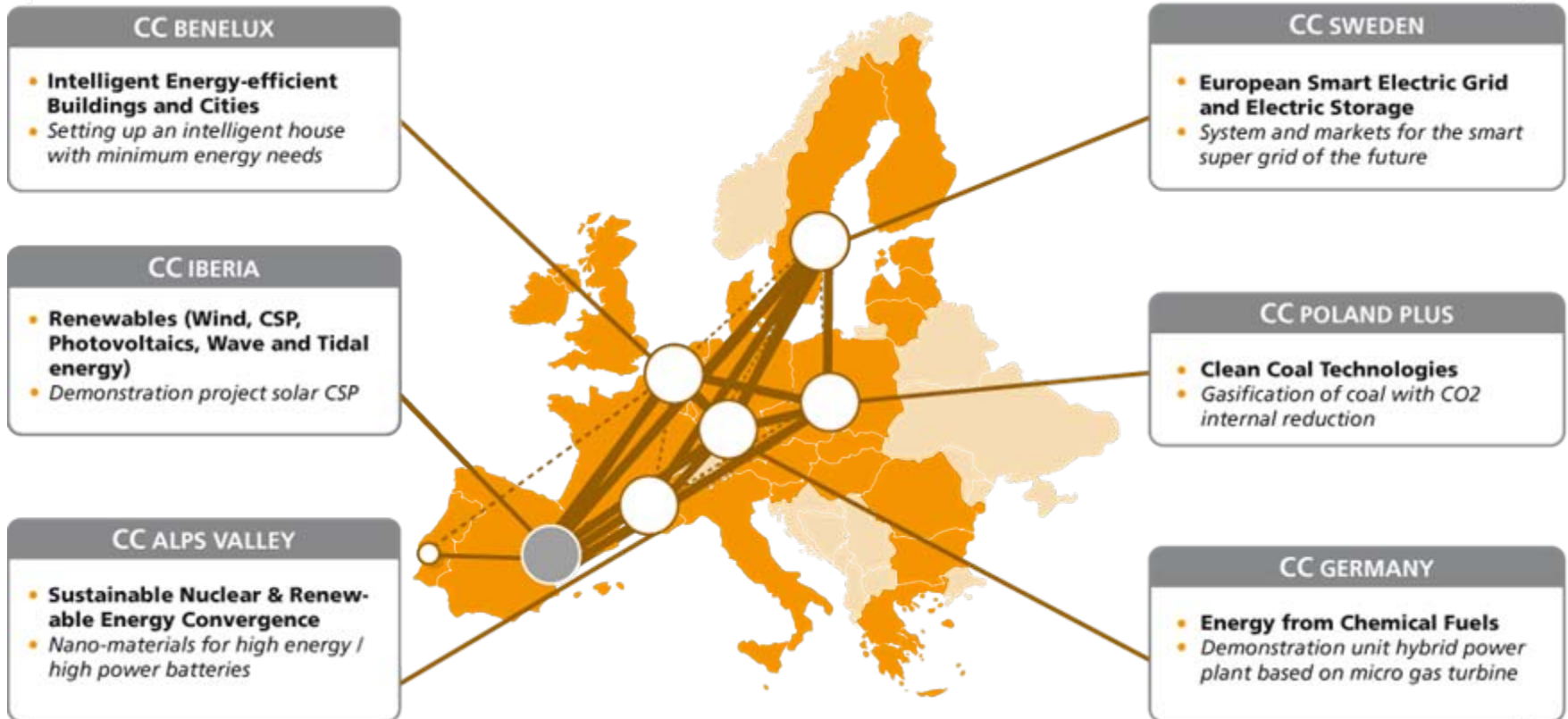
- Started on 2010 – the first phase until 2017

# KIC InnoEnergy – A world class alliance of top European players with a proven track record



- 13 companies, 10 research institutes, 13 universities
- ~50% industry partners (incl. associated partners)
- >50% of key research players in Europe
- Covering the whole energy mix
- Knowledge triangle balanced along all dimensions
- Strong connection with VCs and local governments

# KIC InnoEnergy will bring innovation to the whole energy-mix coherent with the SET Plan



# Integration of the knowledge triangle – Our practical approach will boost innovation in Europe

- KIC Mobility Programme
- KIC Explore House
- New curricula
- Culture of life-long-learning

## Innovation

- KIC Knowledge Market
- Exploration mechanisms
- Innovation network research
- Entrepreneurs/ intrapreneurs
- Financial Nurturing

## Education

- KIC Innovation Market
- Multi-disciplinary joint-projects
- Open & Cross Innovation
- State-of-the-art IP policy
- Exploitation mechanisms

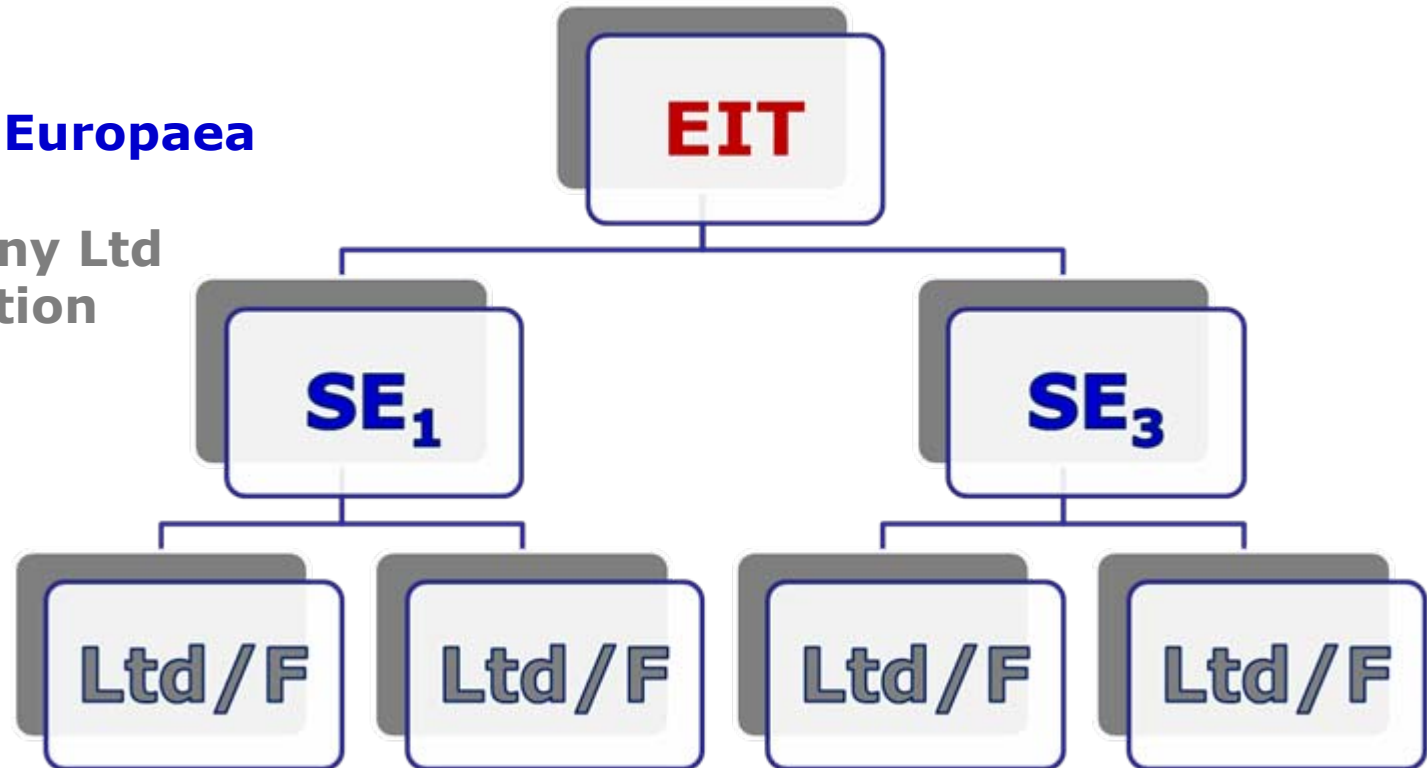
## Research & Technology

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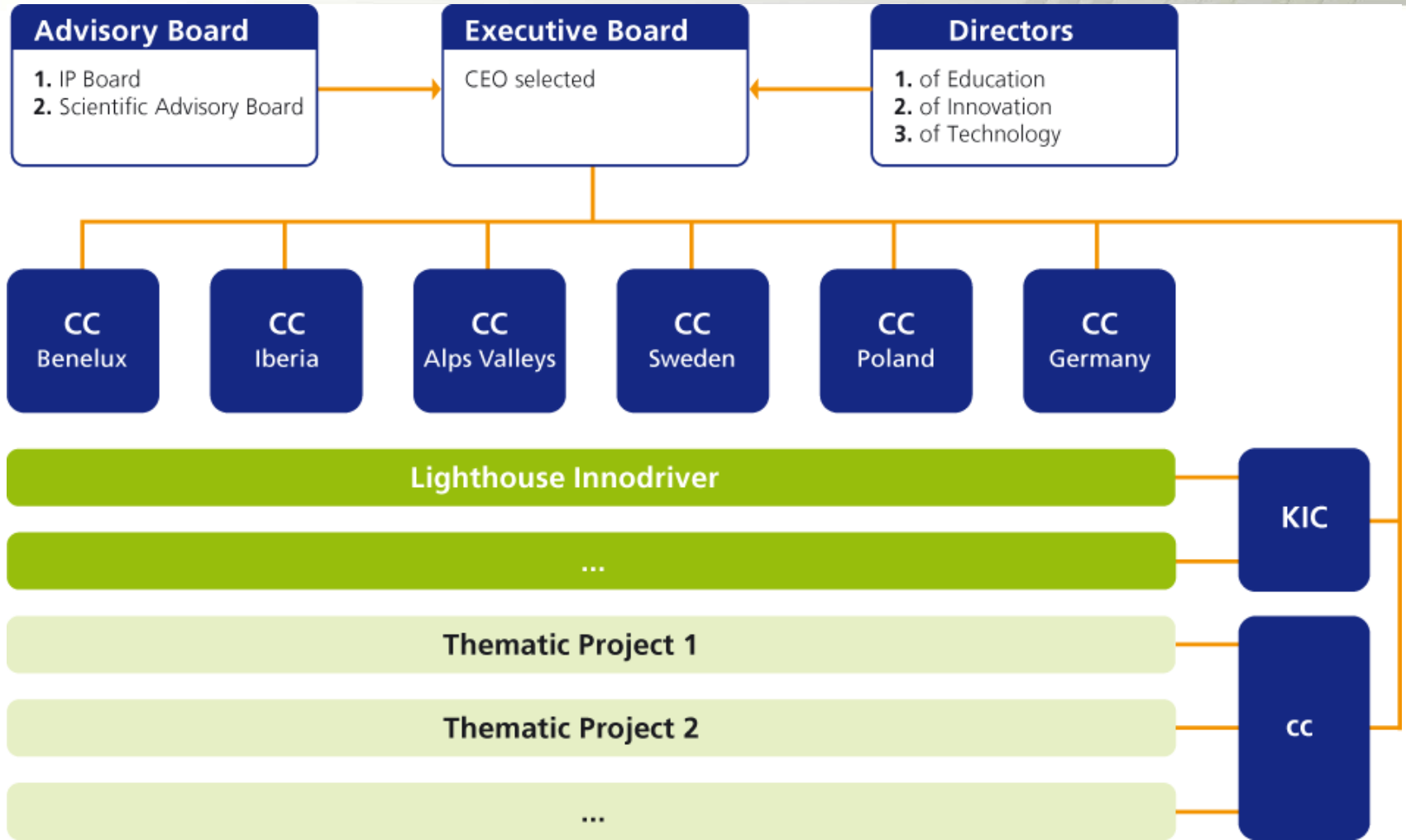


**SE: Societas Europaea**

Ltd – Company Ltd  
F – Foundation

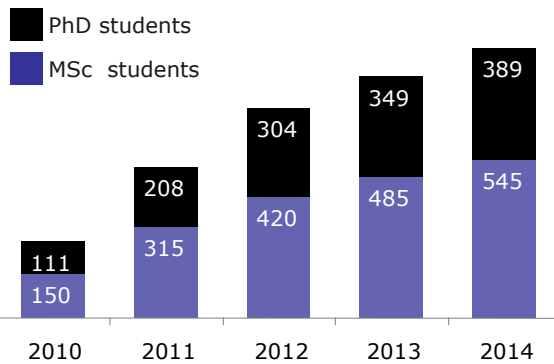


# KIC-InnoEnergy will be run like a business through a flexible and effective organizational structure

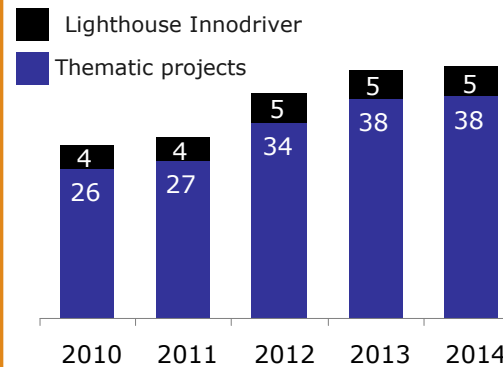


# KIC InnoEnergy will be run like a business with a sound and monitored business plan, focused on results (KPIs)

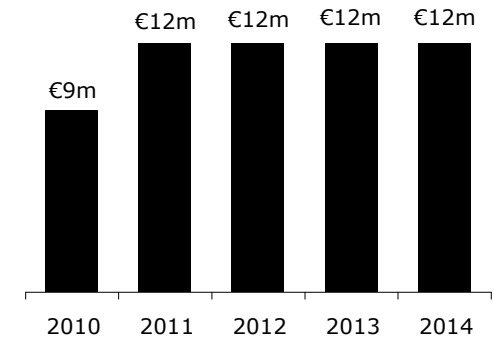
## Education for Innovation



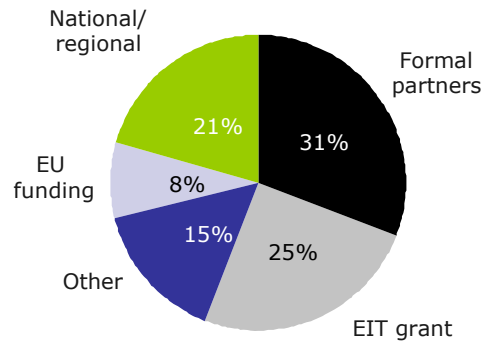
## Projects for Innovation



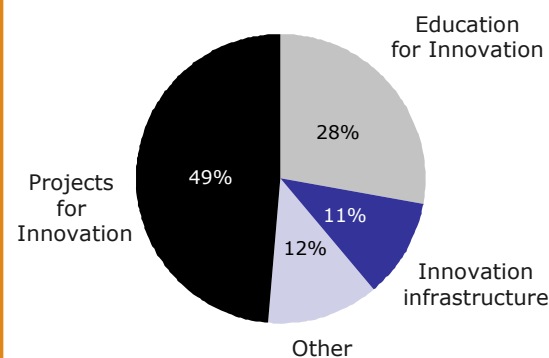
## Innovation Infrastructure



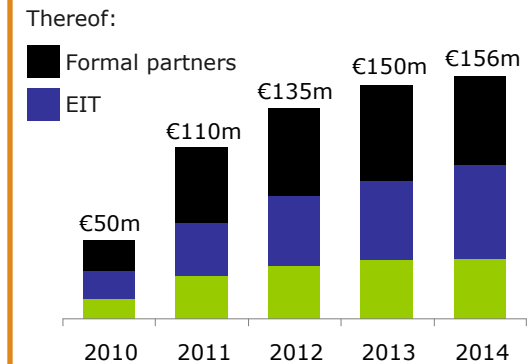
## Sources 1<sup>st</sup> full year – €110m



## Uses 1<sup>st</sup> full year – €110m



## Total KIC budget






# CC PolandPlus - Main Partners



# CC Poland Plus Main Partners

**Univers./  
Res.Inst.**




**Industry**



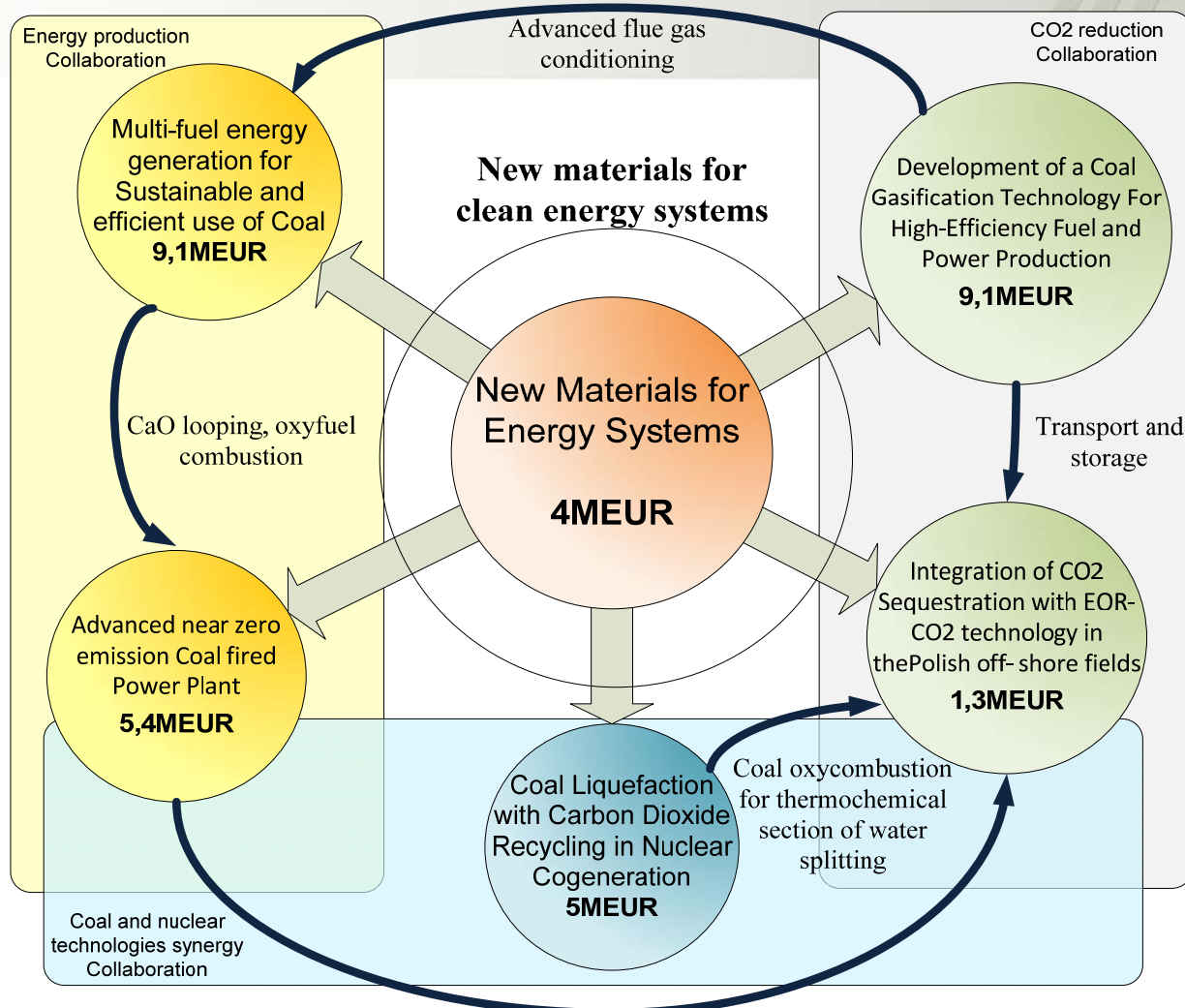
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1. **Development of coal/lignite gasification technologies**
2. **Improving efficiency of energy production and reduction of emissions**
3. **CO<sub>2</sub> capture and storage**
4. **Nuclear co-generation. Nuclear – coal synergy, including of recycling CO<sub>2</sub>**

	<p>AGH University of Science and Technology</p>		<p>Crude oil production refining and distribution</p>		
	<p>Jagiellonian University</p>		<p>Wrocław University of Technology</p>		<p>Oil and gas exploration production</p>
	<p>Silesian University of Technology</p>		<p>Institute of Chemical Processing of Coal</p>		<p>Production, distribution of energy</p>
	<p>Central Mining Institute</p>		<p>Boilers manufacturer</p>		<p>Manufacturer of chemicals</p>

# CC Poland Plus projects overview

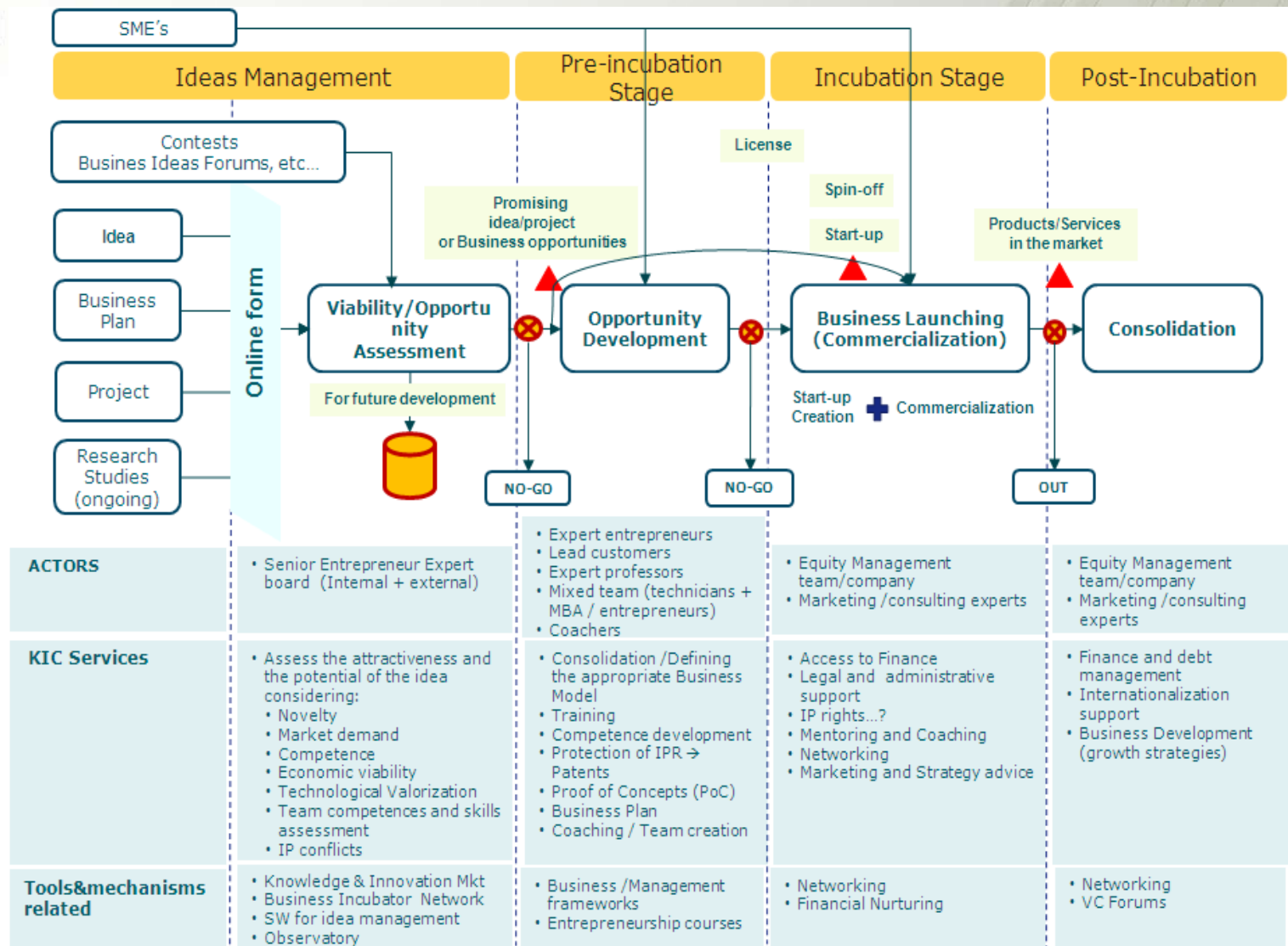


CO2 reduction technologies

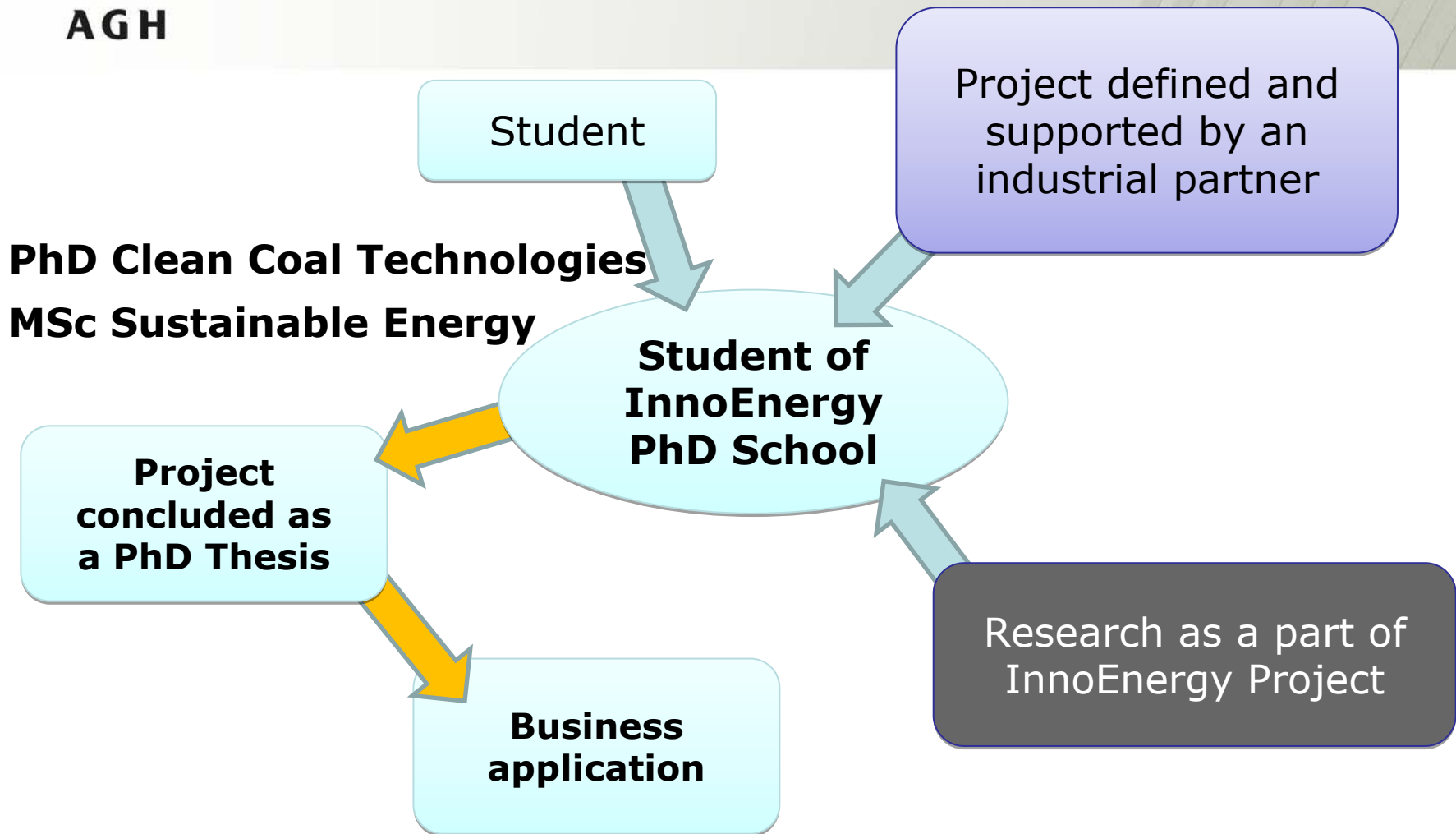
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# InnoEnergy Highway – business creation process



## InnoEnergy education activities integration





# Conclusion

KIC concept seems to be **very attractive**, but needs careful and systematic implementation.

1. New paradigm of University-Industry partnership – making business together
2. Prospective remarkable improvement of innovation.
3. Possibility for long term collaboration
4. Engagement of students in real innovation projects
5. Education and training entrepreneurial students.
6. ...



# Conclusion

KIC concept seems to be very attractive, **but needs careful and systematic implementation.**

## Challenges

1. Goals of University and Industry are different it – it is sometimes difficult to find consensus.
2. IPR should be carefully defined. General guidelines should be established, but sometimes additional regulations for particular project should be agreed.
3. Support from governmental or regional authorities is very important, especially on the beginning of creation process.
4. ??



***Thank you for your attention !***

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