



Technology Development for the Economic and Ecological Utilization of Biomass and other Alternative Residues through Carbonization Processes



Gefördert durch:



Bundesministerium
für Wirtschaft
und Energie

aufgrund eines Beschlusses
des Deutschen Bundestages

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Innovation and Education Center Hohen Luckow (IBZ)

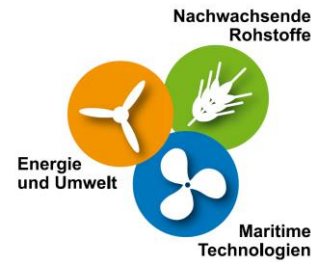


Main Focus

- ❖ Introducing of Innovation and Education Center
- ❖ Network Biogas Maritime
- ❖ Carbonization processes
- ❖ International Network with Vietnam CARBOnet
- ❖ Roadmap of the Network CARBOnet

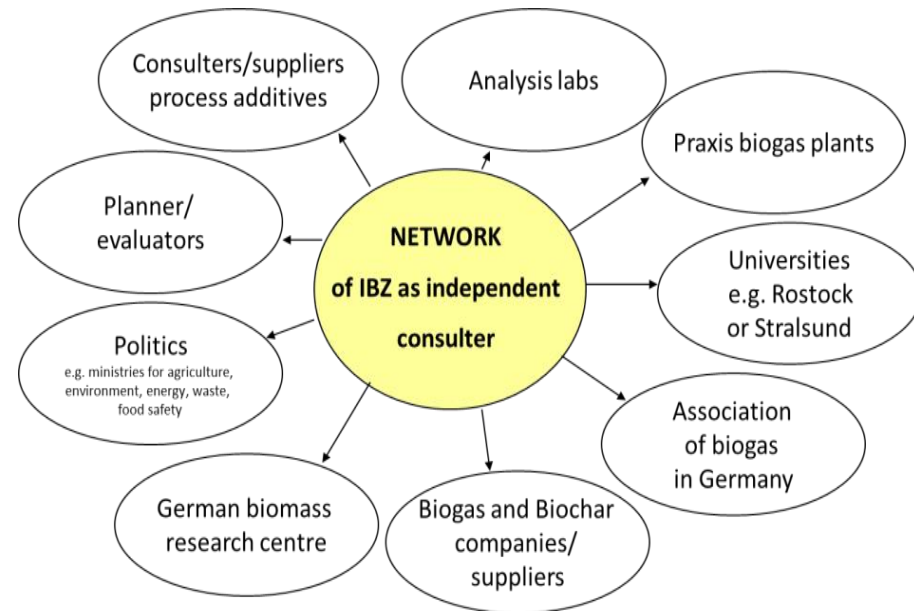


Introducing of Innovation and Education Center (IBZ)



Our main activities are:

- Applied researches for the development of technologies and products
- Elaboration of feasibility studies regarding energy, environment and bioeconomy activities
- Independent Consulting support e.g. in the designing and construction of commercial biogas plants
- Events like our annually bioenergy-seminar



Network Biogas Maritime

„Biogas Technologies for Energetic Utilization of Maritime Waste“



NETWORK PARTNERS



SUPPORTERS

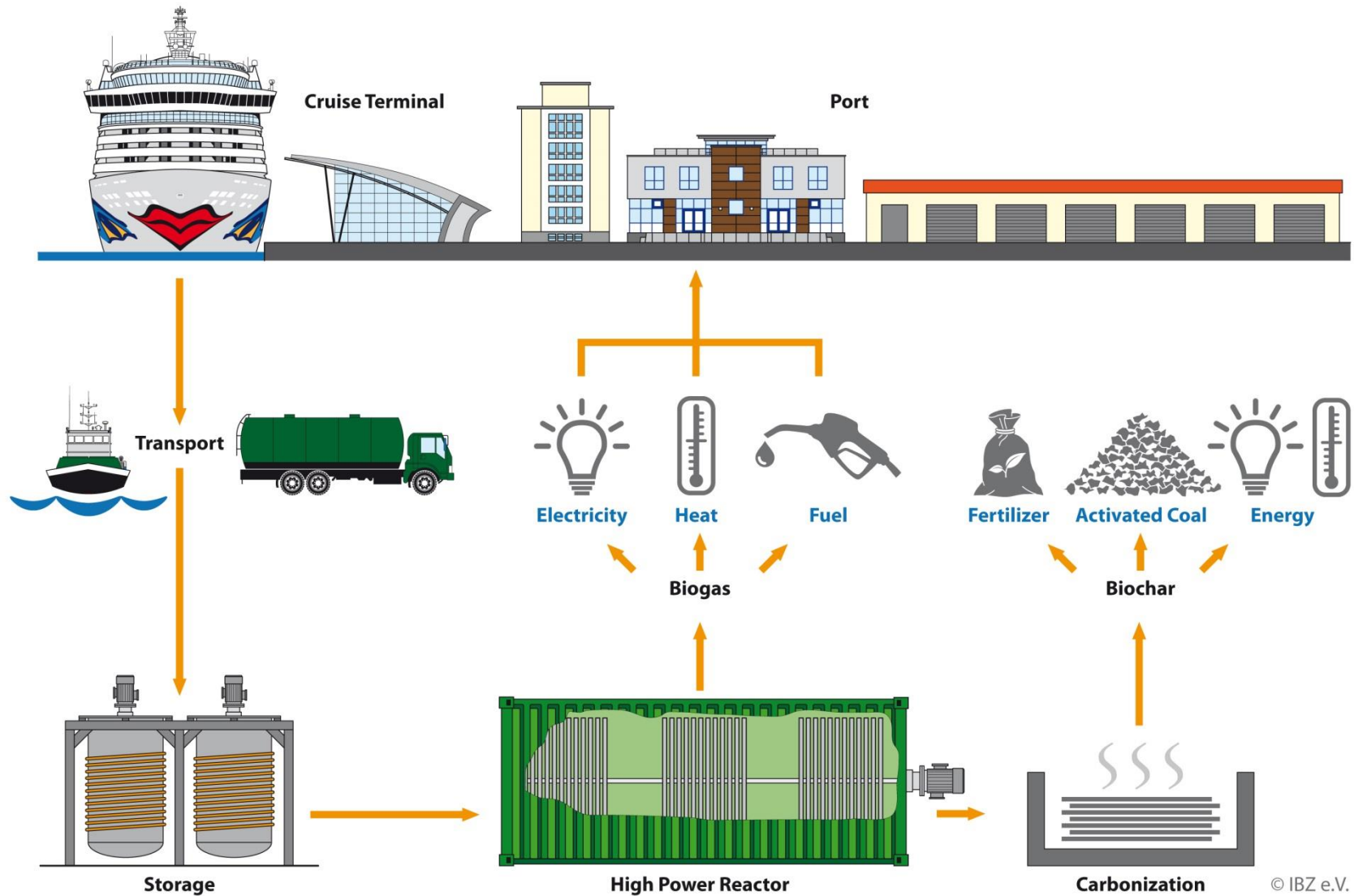


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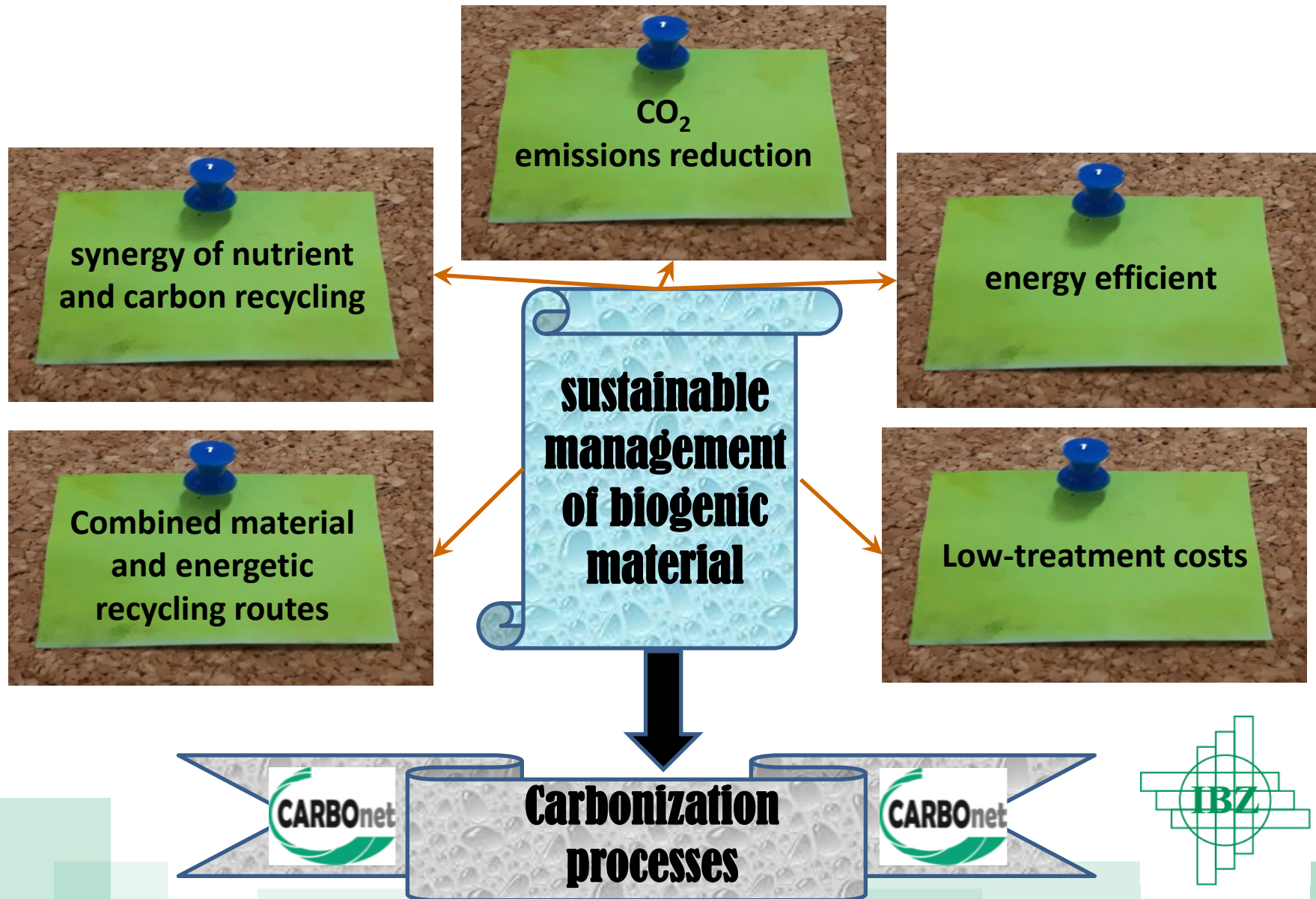
Waste and Sludge to Energy

Waste Management Concept for Ship Waste of International Origin



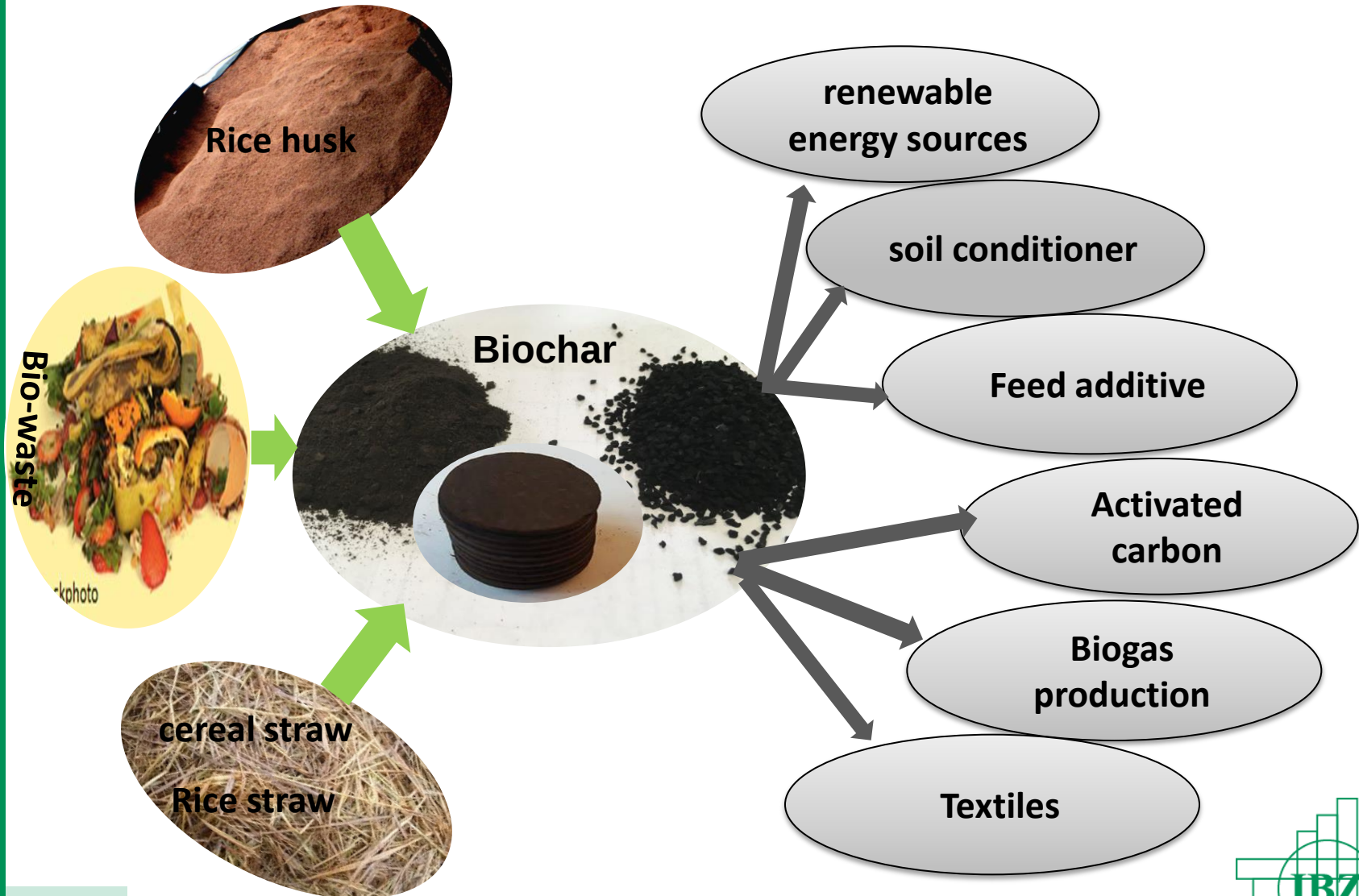
Carbonization processes

sustainable management of biogenic material



Why biochar?

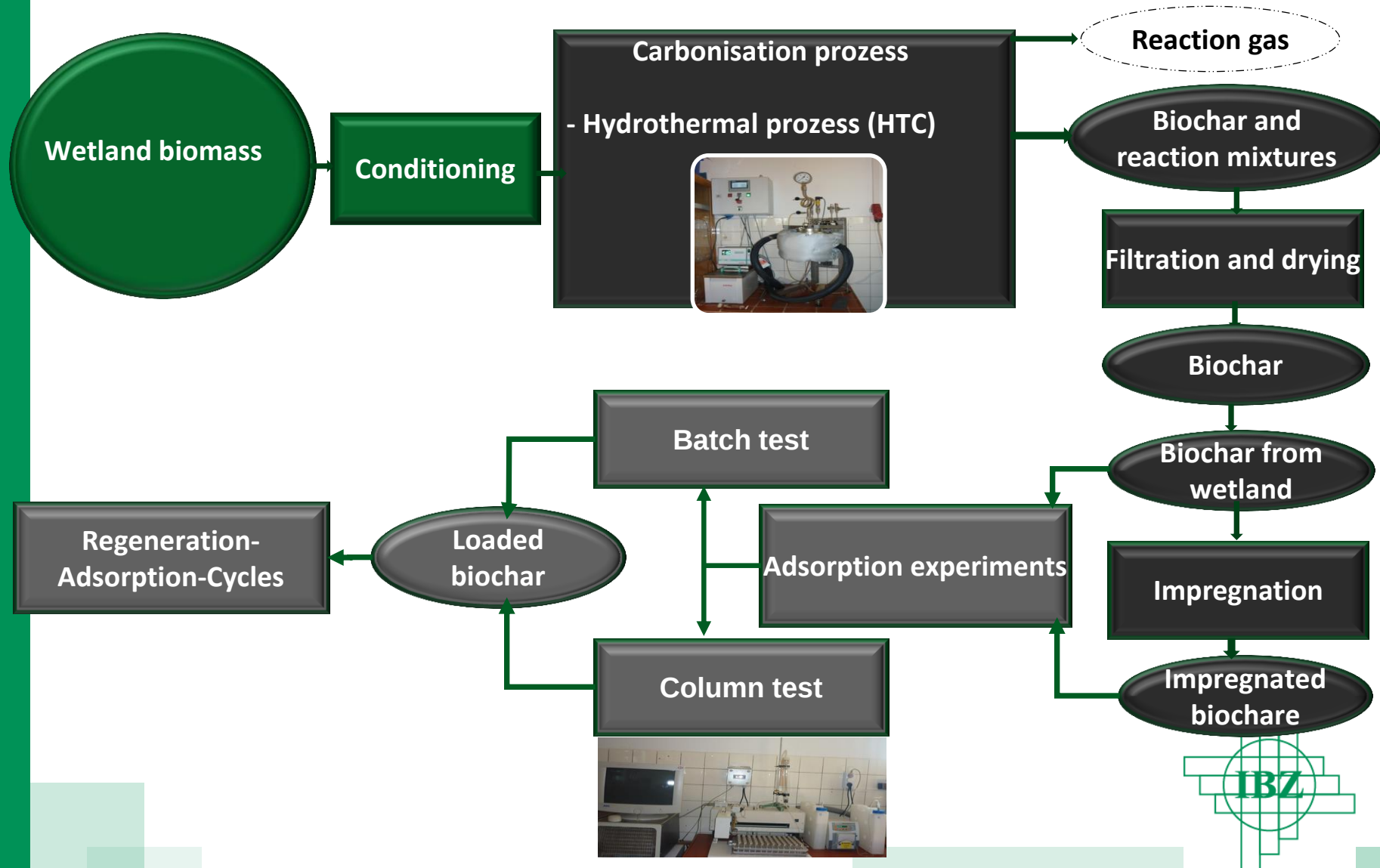
Carbonization technology contribution to bioeconomy



Black gold for agriculture and industry

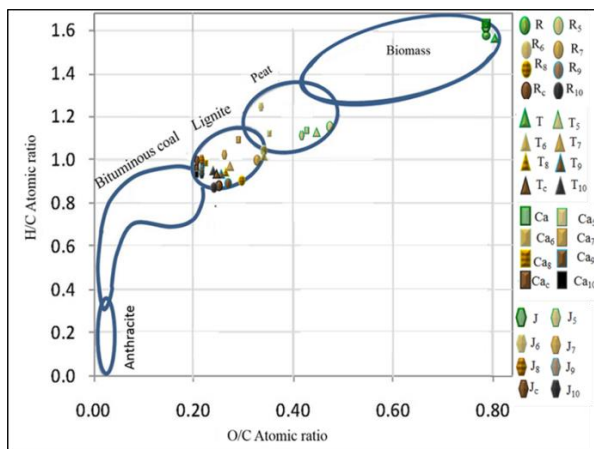
Our research examples

Biochar from wetlands, agricultural residues and biowaste

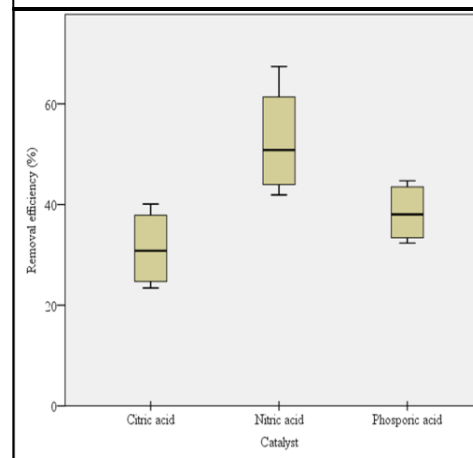
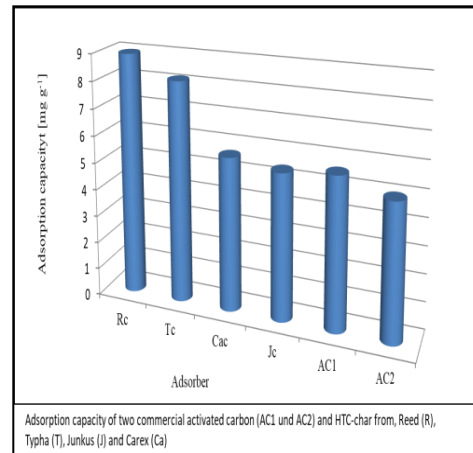


Our research examples

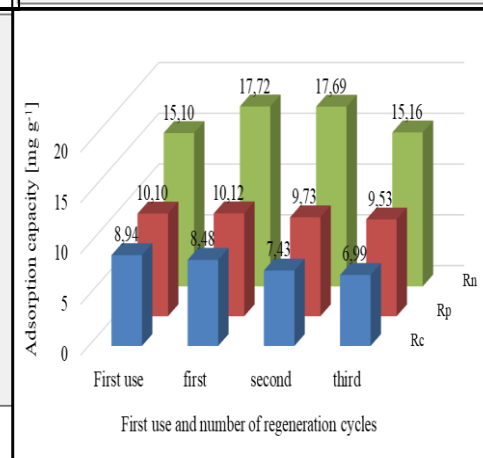
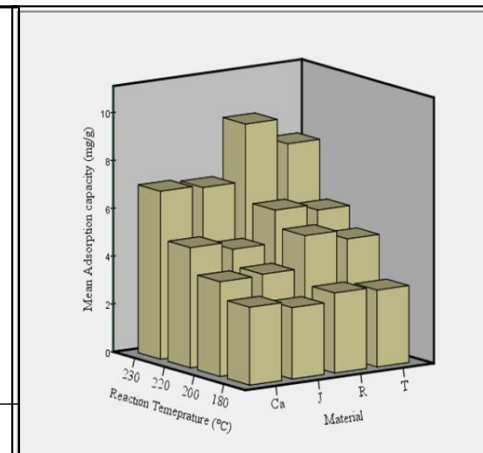
Biochar from wetlands as filter for wastewater treatment



Raw material and HTC-chars



HTC-chars as adsorbents



Our research examples

Limits and ingredients of HTC-water

Parameter	Unit	Wastewater limit	HTC-water after carbonisation of biogas digestate		HTC-water after carbonisation of kitchen waste	
			at 180 °C	at 200 °C	at180 °C	at 200 °C
PH-value	(-)	6.5-10.0	6.125	6.132	4.336	3.525
color	(-)	Dye-containing wastewater may only be derived if its decolorization is guaranteed in the municipal wastewater treatment plant.	dark Brown			
Chemical Oxygen Demand (CSB)	mg/l	800	28000	24000	57000	51000
biochemical oxygen demand(BSB5)	mg/l	500	21000	17000	40000	35000

Challenge of biochar production and processing technology

- Public perceptions and the lack of consumer awareness
- The need to improve public trust and ethical application of the new technology
- The difficulty of producing a biochar with a consistent high quality
- The management of generated HTC-process water



INTERNATIONAL COOPERATION NETWORK

International technology network for the economic and ecological utilization of biomass and other alternative residues through carbonization



GERMAN NETWORK PARTNERS



SUPPORTERS



VIETNAMESE PARTNERS



Supported by:



on the basis of a decision
by the German Bundestag



International Network with Vietnam CARBOnet

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**Building and developing an
innovative interdisciplinary
network**



**Creating focused group as a
leading center for strategic
development**



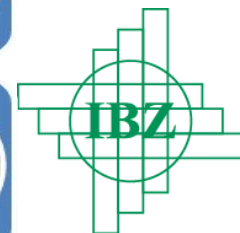
**Synergetic cooperation in the
fields of waste-to-energy
technology**



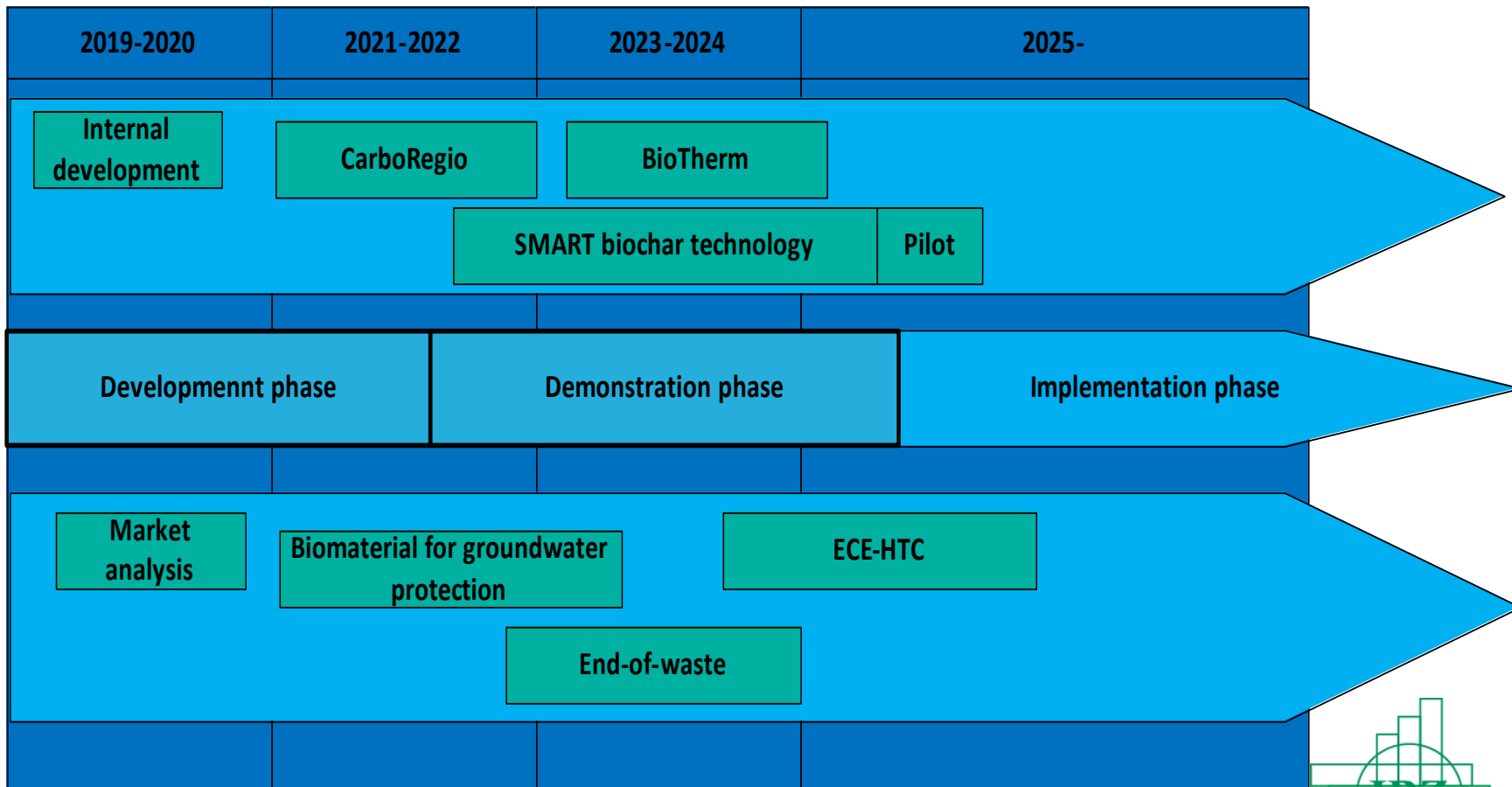
**Development of new
international projects in the
fields of waste-to-energy**



**Development of thermal
waste treatment technologies
for renewable products**



Planned Roadmap of the Network CARBOnet



Many thanks for your attention!



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