

Serbian/German Bioenergy Research Cooperation

Identification, assessment and realization

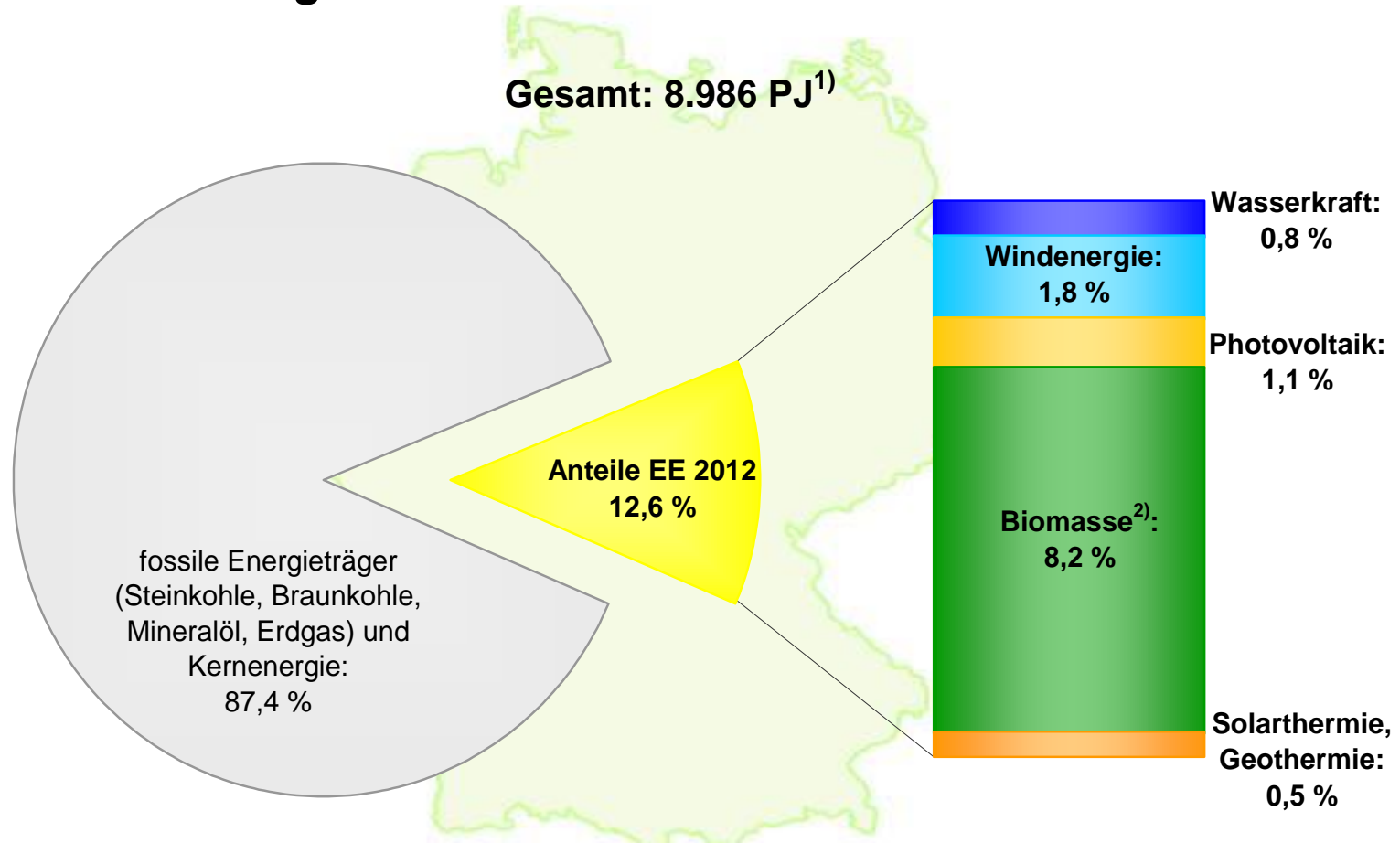
Martin Kaltschmitt



- Background
- Goal
- Approach
- First Results
- Proposed Procedure
- Final Consideration



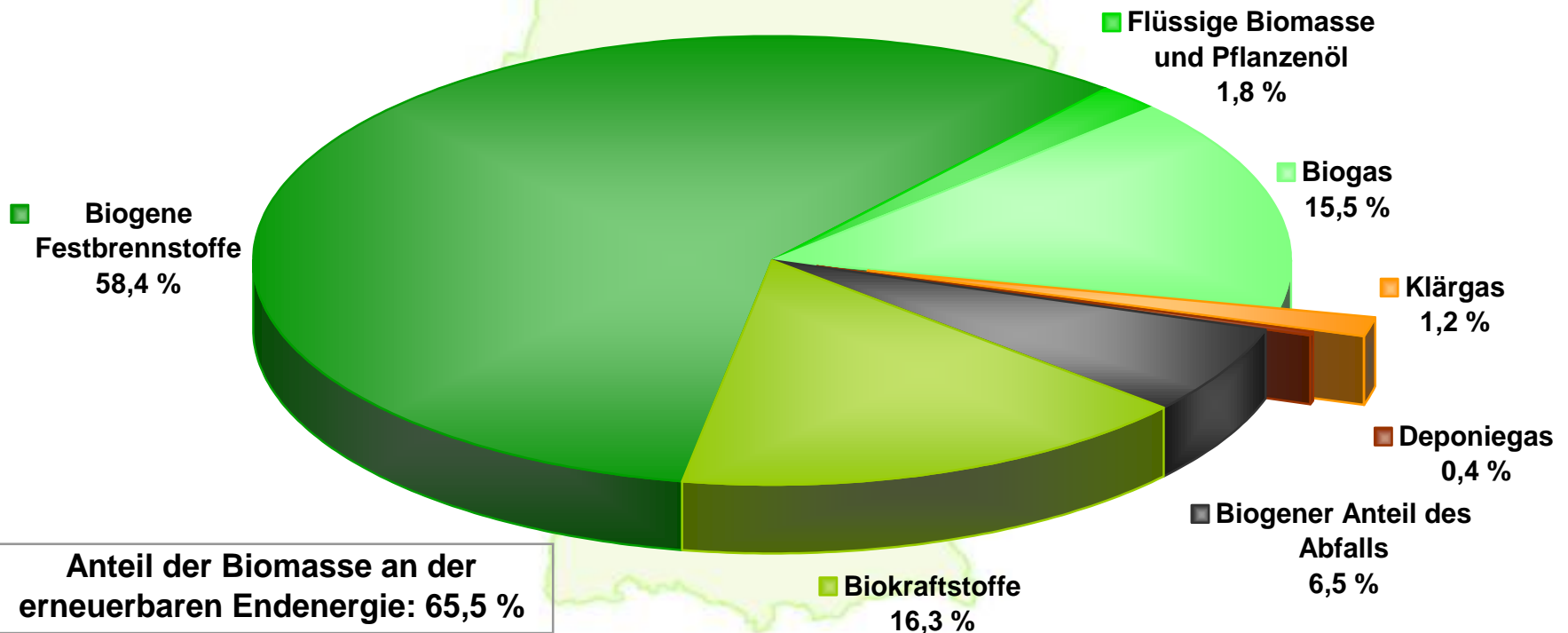
Anteil erneuerbarer Energien am Endenergieverbrauch in Deutschland im Jahr 2012



1) Quelle: Arbeitsgemeinschaft Energiebilanzen e.V. (AGEB); 2) Feste und flüssige Biomasse, Biogas, Klär- Deponiegas, biogener Anteil des Abfalls, Biokraftstoffe;
 Quelle: BMU - E I 1 nach Arbeitsgruppe Erneuerbare Energien-Statistik (AGEE-Stat) und ZSW, unter Verwendung von Angaben der AGEB;
 EE: Erneuerbare Energien; 1 PJ = 10¹⁵ Joule; Abweichungen in den Summen durch Rundungen; Stand: Februar 2013; Angaben vorläufig

Struktur der Endenergiebereitstellung aus der gesamten Biomasse im Strom-, Wärme- und Kraftstoffbereich in Deutschland im Jahr 2012

Gesamt: 205,5 TWh

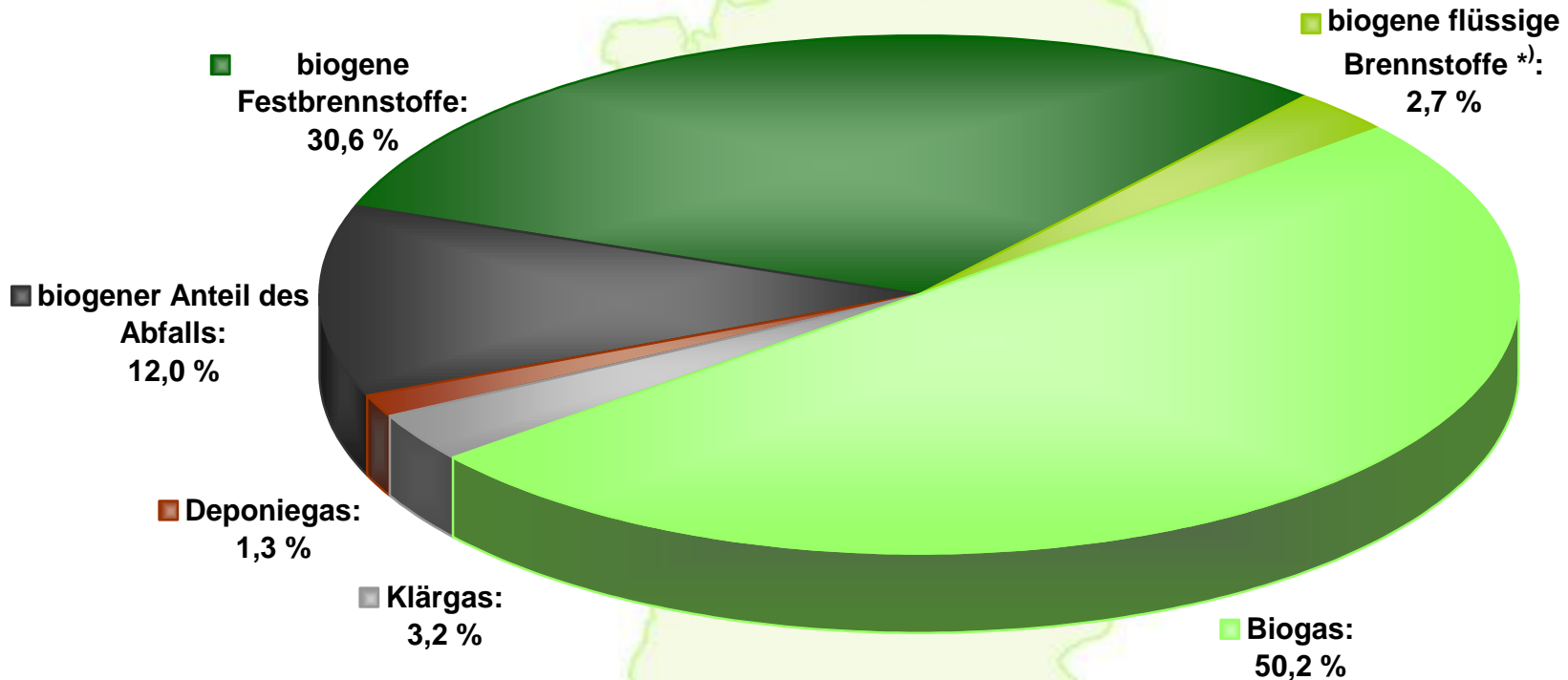


1 TWh = 1 Mrd. kWh; Abweichungen in den Summen durch Rundungen;

Quelle: BMU - E 1 1 nach Arbeitsgruppe Erneuerbare Energien-Statistik (AGEE-Stat); Stand: Februar 2013; Angaben vorläufig

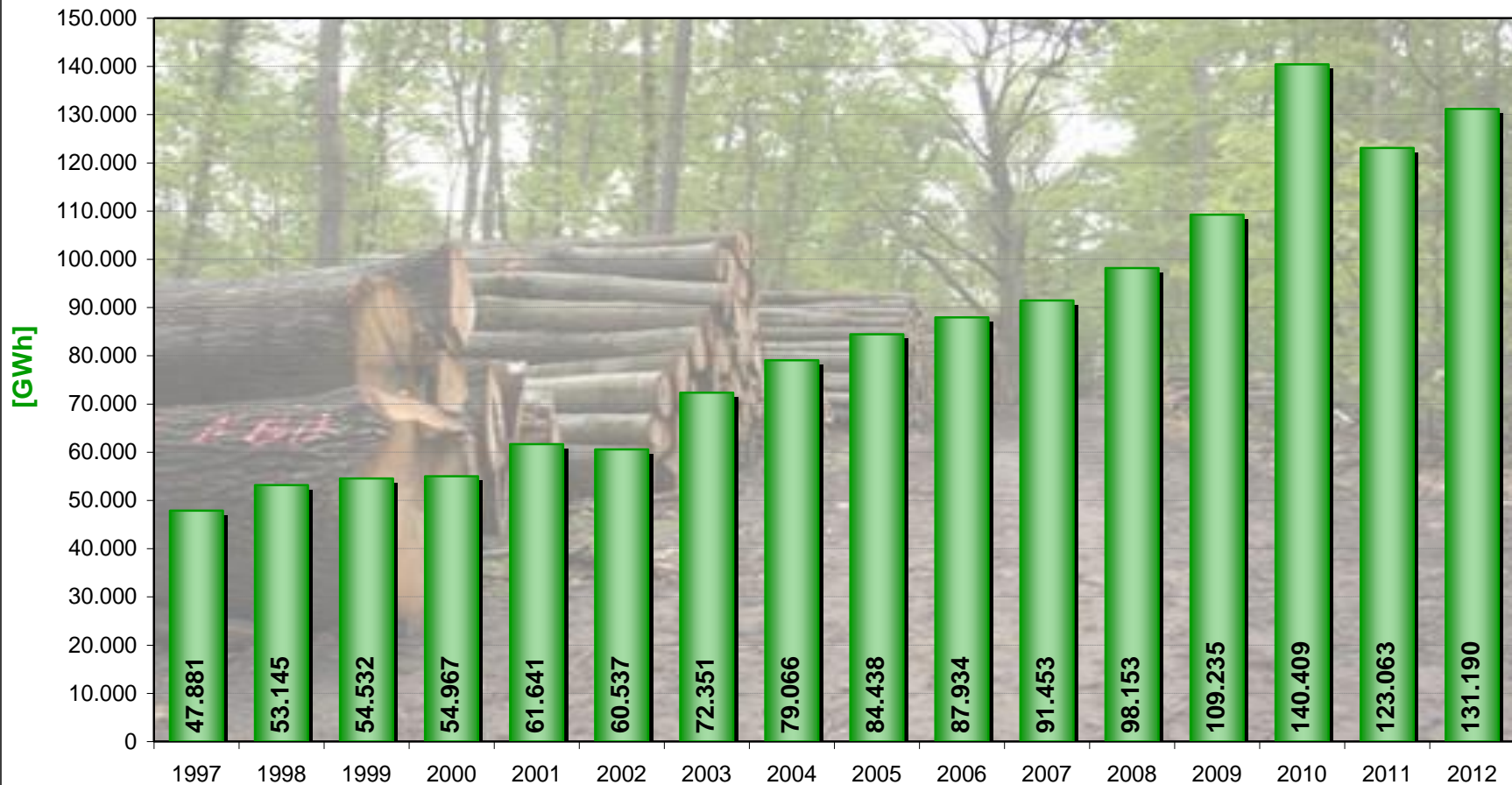
Struktur der Strombereitstellung aus Biomasse in Deutschland im Jahr 2012

Gesamt: 40,9 TWh



*) Inklusive Pflanzenöl; Quelle: BMU - E I 1 nach Arbeitsgruppe Erneuerbare Energien-Statistik (AGEE-Stat); 1 TWh = 1 Mrd. kWh; Abweichungen in den Summen durch Rundungen; Stand: Februar 2013; Angaben vorläufig

Entwicklung der Biomassenutzung* zur Wärmebereitstellung in Deutschland in den Jahren 1997 bis 2012



* Feste und flüssige Biomasse, Biogas, Klär- und Deponiegas, biogener Anteil des Abfalls; 1 GWh = 1 Mio. kWh;

Quelle: BMU - E 1 1 nach Arbeitsgruppe Erneuerbare Energien-Statistik (AGEE-Stat); Hintergrundbild: BMU / Brigitte Hiss; Stand: Februar 2013; Angaben vorläufig

- Biomass could be used more widely in Serbia to contribute to a more environmental sound energy provision; this is especially true for a reduction of greenhouse gas (GHG) emissions
- In particular for an extended use of solid biomass (i.e. wood, straw) considerable possibilities can be expected because Serbia has significant unexploited potentials of such organic material
- GIZ has set up a program to support the market introduction of such possibilities; all over a market oriented approach is realized
- To ensure that bioenergy become a significant part of the Serbian energy system (and that the related activities are sustainable and will continue when the ongoing and/or starting GIZ-bioenergy projects are finished in the years to come) highly educated specialists are needed which are able to increasingly continue in realizing new and maintaining the already ongoing activities in a more and more improved way
- This includes also an extended bioenergy research to deepen the understanding of the pros and cons of biomass for energy as an integral part of the overall energy system and to improve the performance of existing and planned biomass conversion plants

- The overall goal of this project is it to assess the possibilities to realize a long-term research cooperation between Serbia and Germany (e.g. PhD program) in the field of biomass & bioenergy
- This includes the following tasks:
 - Identification of research groups active within the field of biomass & bioenergy in Serbia and Germany preferably at universities
 - Assessment of their willingness for a deeper and extended research cooperation between the two countries
 - Identification of research and/or PhD topics related to bioenergy to be of interest by Serbian and German research groups
 - Matchmaking between Serbian and German research groups (e.g. from Universities) to assess common ground and promising collaboration areas
 - Analysis of (German and/or European) institutions willing to sponsor such a research co-operation on a long term basis
 - Development of a proposal for such an exchange program tackling the interests of both countries as well as the sponsoring agency
 - Compiling of a proposal / application for such a program

- Visits of the various research groups in Serbia and Germany
- Discussions with researchers / professors in the field of biomass and bioenergy in both countries
- Development of a deeper understanding of the needs, the interests, the capacities, the existing equipment and the willingness for an extended cooperation on both sides
- Discussions with representatives from (German and/or European) funding organizations
- Assessment of possible research topics of interest for Serbian and German research partners
- Development of a widely acceptable proposal for a possible co-operation model between Serbian and German research groups
- Proposals for "dream teams" between Serbian and German partners designed for a long term relationship
- Trying to set up such a scientific collaboration program between the two countries

- There are considerable research activities in the field of biomass & bioenergy carried out at the University in Belgrade and the University in Novi Sad; this is true for the following research areas
 - Solid biomass (e.g. optimization of combustion units, PM emissions)
 - Biofuels (e.g. bioethanol)
 - Biogas (e.g. from animal manure, straw)
 - Bioenergy systems / system analysis and system assessment
- There are already some successful research cooperation's in this field between Serbian and German universities / research centers realized over decades
- There is the clear interest and willingness to expand and deepen this bilateral collaboration also with other / new partners / institutions and/or different research topics related to bioenergy
- There are promising signals from DAAD that a PhD-exchange program could possibly be realized during the years to come; as a first obligingness DAAD is willing to support a short time exchange of scientists / PhD-students between Serbian and German universities

- Verifying of the willingness to realize such a PhD-program between Serbian and German research institutions / universities
- Definition of the basic points of such a program; this includes among others:
 - How many students should / could be exchanged during a defined time period? What are the main research topics in bioenergy to be tackled?
 - Which philosophy should such a program follow to allow for a maximum acceptance by everyone (e.g. sandwich approach, duration, life time)?
 - What additional measures need to be put in force to ensure a long lasting and successful cooperation between Serbian and German partners (e.g. exchange of professors, common education schemes)?
 - Does it make sense to narrow down the German partners to two / three / four locations to allow for a better exchange and cooperation between the various partners resp. the PhD-students?
- Development of a proposal for DAAD for such a program to be implemented starting in 2015
- Preparation and implementation of this program (Make it happen!)

- There is a high potential for an expanded research cooperation between Serbian and German universities / research institutions in the field of biomass & bioenergy; first bilateral discussions between Serbian and German professors have taken place
- There is a certain probability that such a more intensive exchange could be supported by DAAD; first discussions has taken place in recent weeks and more meetings will follow ...
- Selected Serbian and German partners have already indicated their willingness to contribute to such a goal resp. to participate within such a program; first meetings have taken place and numerous e-mails have been send during the last months
- Therefore the likelihood that a PhD-exchange program in this field could successfully be realized is clearly above 50 %
- But there is still a long way to go (a) to propose the basic points of such a program and (b) to convince e.g. DAAD to sponsor it
- Such an exchange program could be a great opportunity to support the overall goal of the GIZ-biomass program

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