



# Czech-Austrian Spring and Summer School

Revaluation of biomass potential under the perspective of the new sustainability challenges

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Co-operating Universities



Financial support by



# SUMMARY

INTRODUCTION  
METHODOLOGY  
RESULTS  
CONCLUSIONS

## Sources of biomass energy



[What is Biomass Energy? Pros and Cons and how it all works | OVO Energy](#)



# INTRODUCTION



## Motivation:

Reevaluate potential

Promote growth  
and awareness



## Overview on biomass for energy purposes:

Carbon footprint

Sources

Uses



## Classification of biomass

Primary, secondary,  
tertiary, energy crops

Wet and dry route

Solid, liquid, gaseous



## Intentionally produced energy crops

Characteristics

Advantages

Woody, herbal



# METHODOLOGY

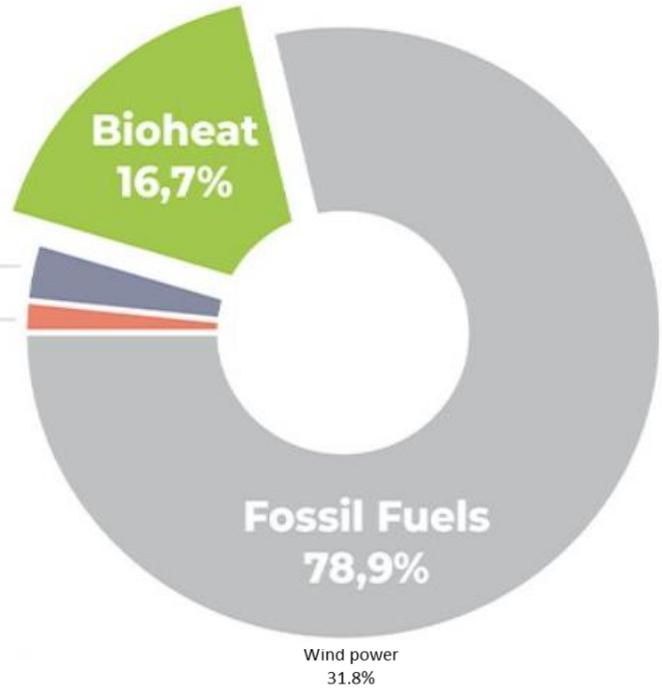
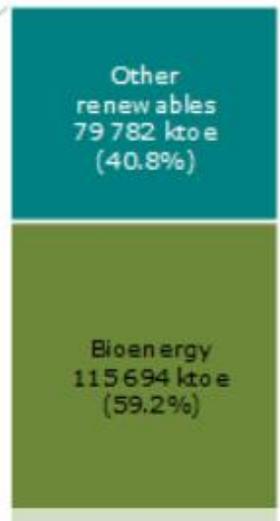
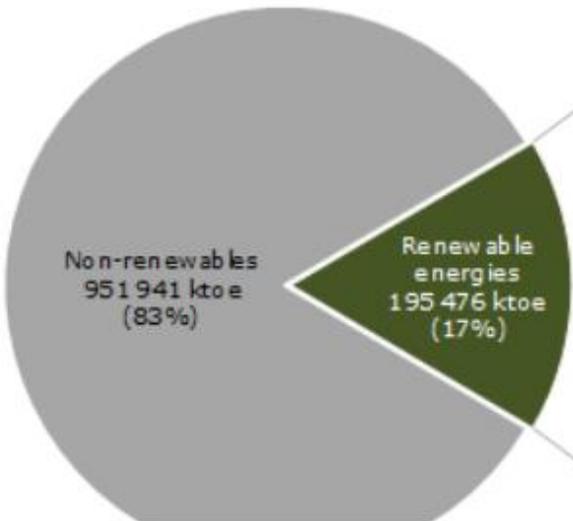
## Biomass in the EU

Electricity production by source, EU-28, 2018 (%)

EU-27,

Contribution of the different energy sources in heating and cooling in EU28 in 2018\* (in %)

(Source: Eurostat, SHARES 2018, Bioenergy Europe's calculation)



Share of renewables in the EU's energy consumption for 2016 and breakdown of the bioenergy contribution

line data co

ec.europa.eu/eurostat

# METHODOLOGY

Biomass in the EU

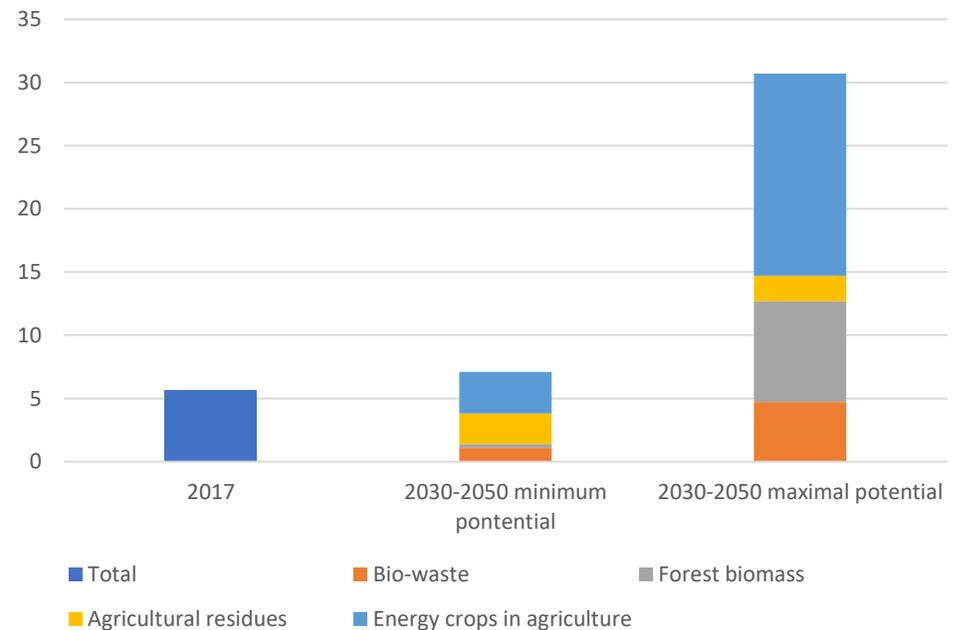
Role of biomass in the future

Situation in Czech Republic

Situation in Austria

- 5.7 EJ in 2017
- Future estimation between 7 and 31 EJ, corresponding to 10 – 46 % of today's total energy consumption
- Impact of climate change

Potential Bioenergy in EU in 2030-2050



# METHODOLOGY

Biomass in the EU

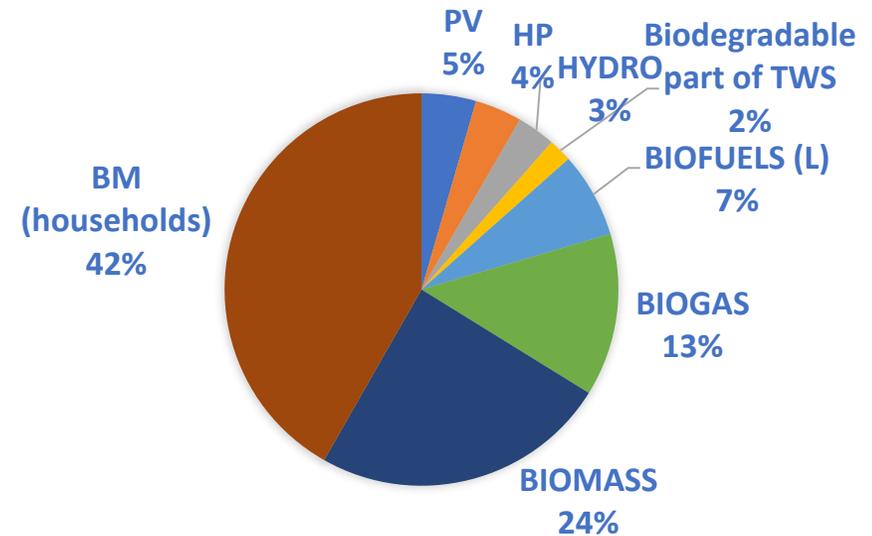
Role of biomass in the future

Situation in Czech Republic

Situation in Austria

- State Energy Concept (SEC) of 2015
- Traditional use of biomass, 87% RES
- 34% of forestal surface
- Challenges, opportunities

## RENEWABLE ENERGY IN THE CZECH REPUBLIC IN 2018



# METHODOLOGY

- Integrated National Energy and Climate Plan for Austria (NECP) of 2019
- Biomass share of RES: 58%
- Wood solid biomass: 80%
- 47% of forestal surface
- Challenges, opportunities

Situation in Austria

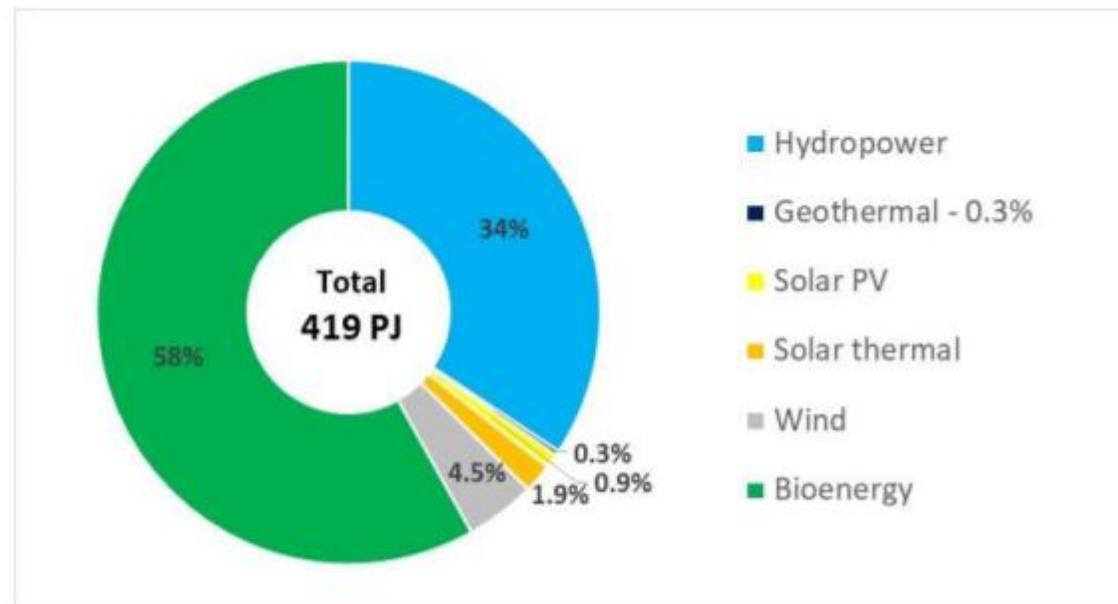
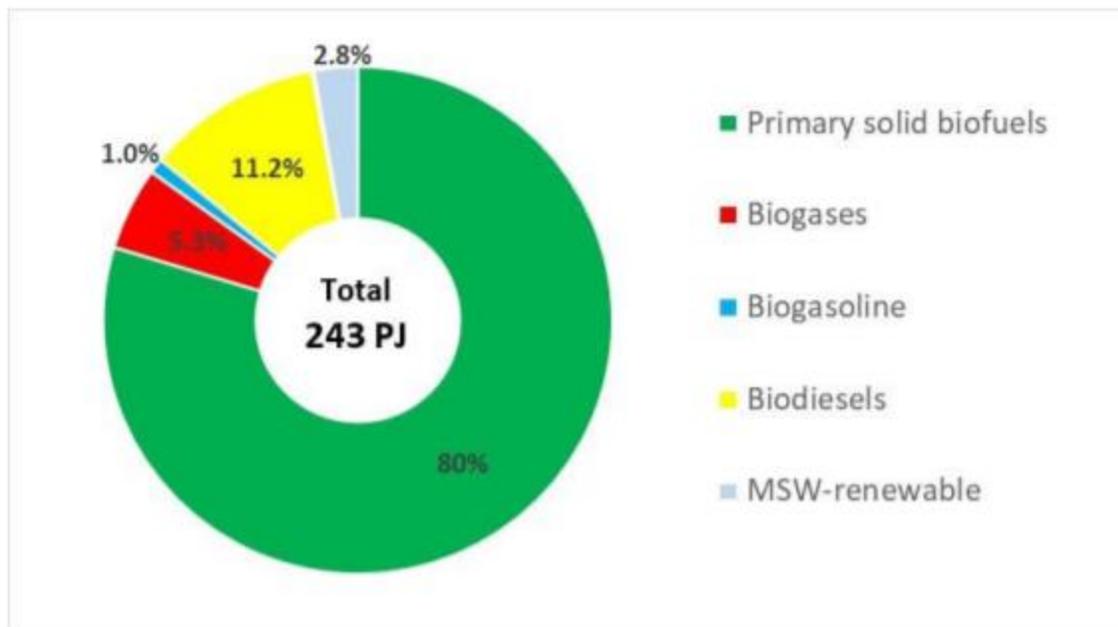


Figure 2: Total primary energy supply of Renewable Energy Sources in Austria in 2016



# RESULTS

Comparison between  
biomass and other  
renewable resources



Comparison between  
Czech Republic and  
Austria

## Common:

- Energy diversification
- Energy security
- Local and internal use
- Social security

## Diverse:

- Ecological services: land recovery
- Ecological services: agroforestry
- Climate and humidity versatility
- Circular and sustainable economy
- Dispatchability and stability
- Cost of transportation and conversion

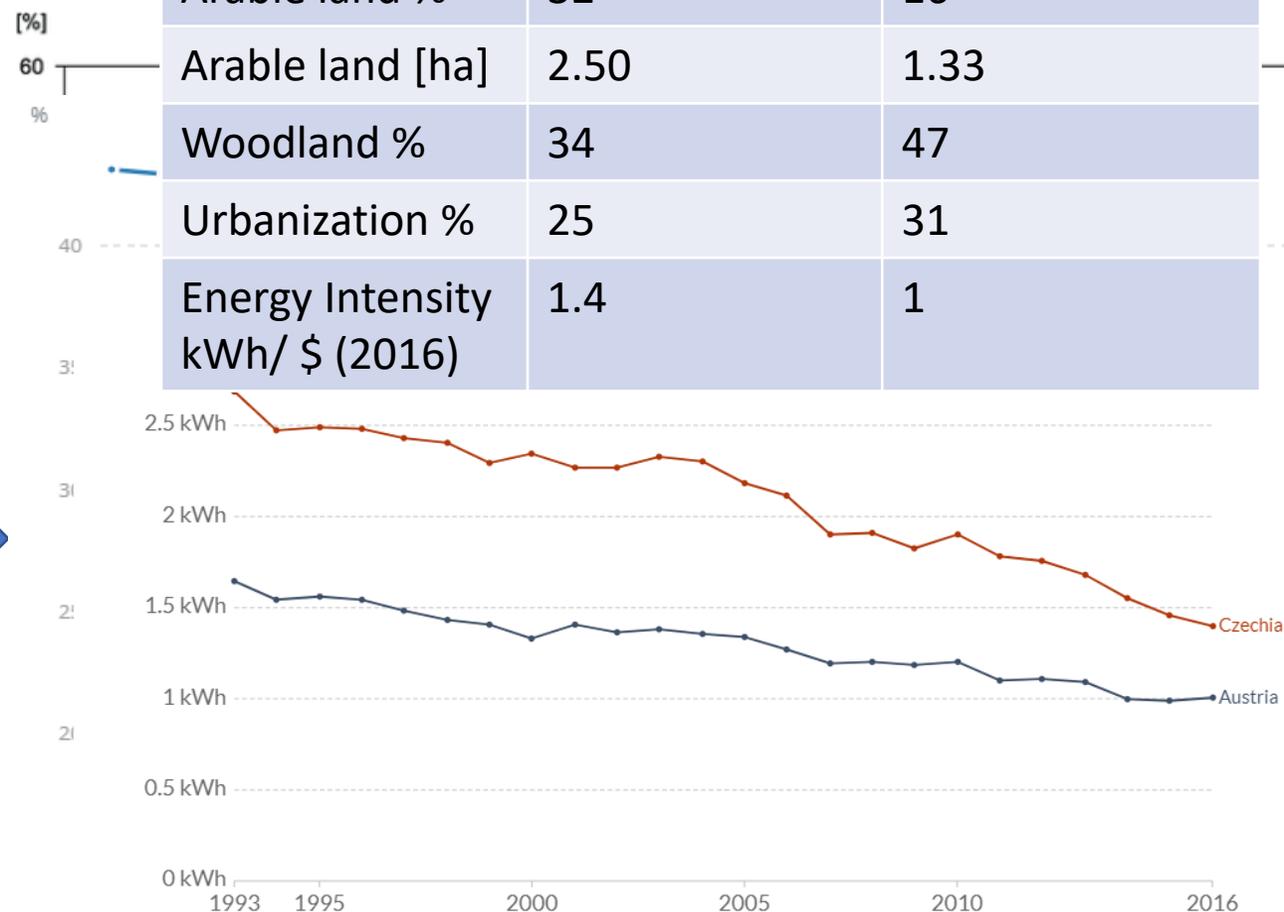


# RESULTS

Comparison between biomass and other renewable resources

Comparison between Czech Republic and Austria

	Czech Republic	Austria
RES % (2016)	15	33
Bioenergy %	87	58
Arable land %	32	16
Arable land [ha]	2.50	1.33
Woodland %	34	47
Urbanization %	25	31
Energy Intensity kWh/ \$ (2016)	1.4	1



Source: Our World in Data based on BP; World Bank; and Maddison Project Database  
 OurWorldInData.org/co2-and-other-greenhouse-gas-emissions • CC BY





THANK YOU FOR  
YOUR ATTENTION

Jakub Skulina  
Gianluca Roccasalvo

