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# PROTECT RESOURCES. STRENGTHEN THE ECONOMY.

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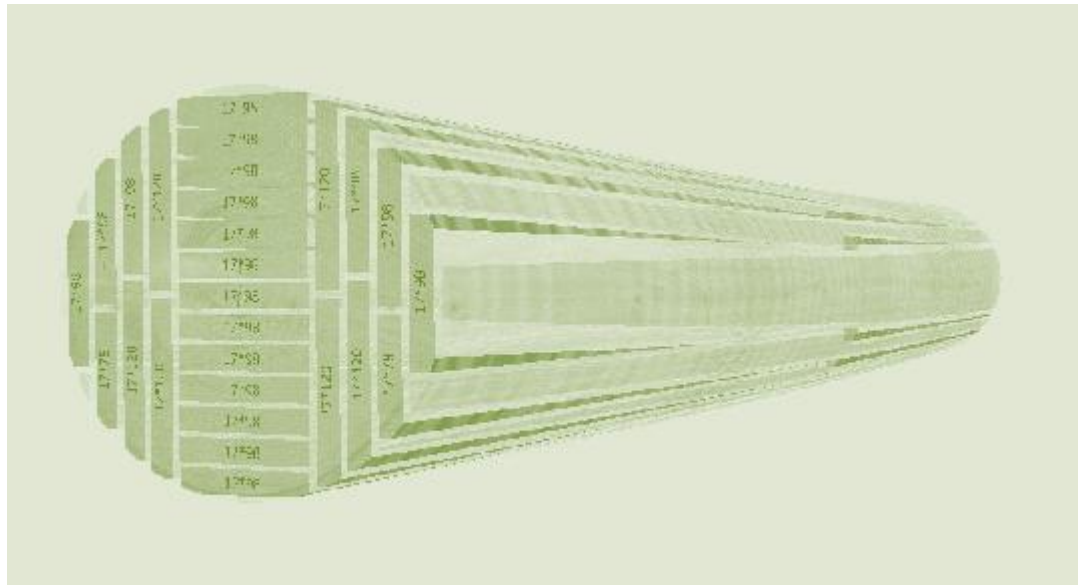
*Resource Efficiency in the  
wood processing industry*

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Effizienz-Agentur NRW*

# RESOURCE EFFICIENCY

## AGENDA

1. General introduction
2. EFAs Working structure
3. Practical Example
4. Conclusions
5. Outlook



# EFFIZIENZ-AGENTUR NRW

## PARTNER FOR RESOURCE EFFICIENCY



- Founded by the Ministry of Environment of North-Rhine Westphalia
- **Objective**  
Improve Competitiveness of Small and Medium sized Enterprises (SMEs) by supporting a strategy of sustainable growth
- **Approach**  
Introduce Innovative Technologies, Methods and (Business-) Processes to SMEs that improve resource efficiency, avoid waste and hazardous emissions and deliver instant results
- over **1.400 Resource-Efficiency-Projects** in SMI since 2000
- 26 employees in Duisburg and 6 regional offices

# STATE OF NORTH RHINE-WESTPHALIA

## SOME KEY FIGURES

**Population: 18 Mio.**

**Area: 34,084 km<sup>2</sup>**

**GDP: 462 Euro bn.  
Rank 14 in the world**

**Foreign Trade:  
Imports: 122 Euro bn.  
Exports: 119 Euro bn.**

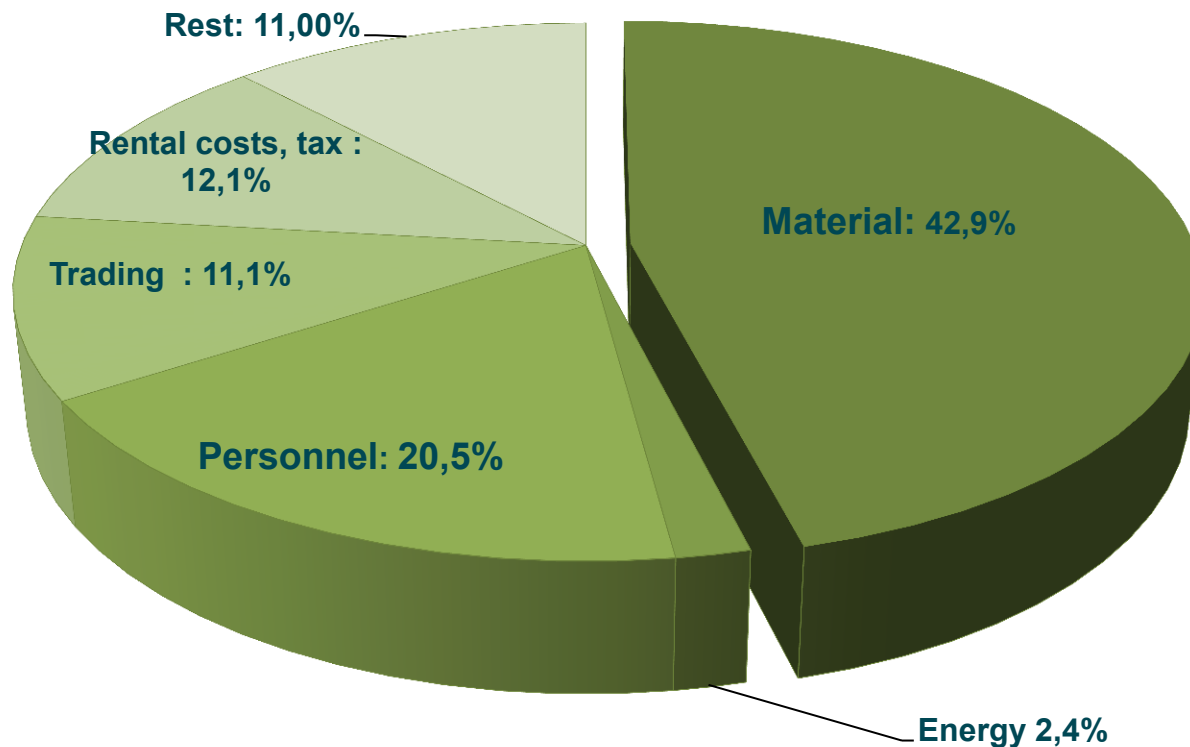


# FOREST AND WOOD PROCESSING INDUSTRY IN NRW

## SOME KEY FIGURES

<b>Employees in Wood industries</b>		<b>200.000 of 5,4Mio in total</b>
<b>Wood consumption per capita</b>	<b>[m<sup>3</sup>-wood equivalent/year]</b>	<b>1,1</b>
<b>Forested Area in total</b>	<b>[km<sup>2</sup>]</b>	<b>9150</b>
<b>Logging Volume</b>	<b>[m<sup>3</sup><sub>(f)</sub>/Jahr/km<sup>2</sup>]</b>	<b>0,65</b>
<b>Logging Potential</b>	<b>[m<sup>3</sup><sub>(f)</sub>/Jahr/km<sup>2</sup>]</b>	<b>0,7</b>
<b>Stock Volume</b>	<b>[Mio. m<sup>3</sup><sub>(f)</sub> ]</b>	<b>approx. 250</b>

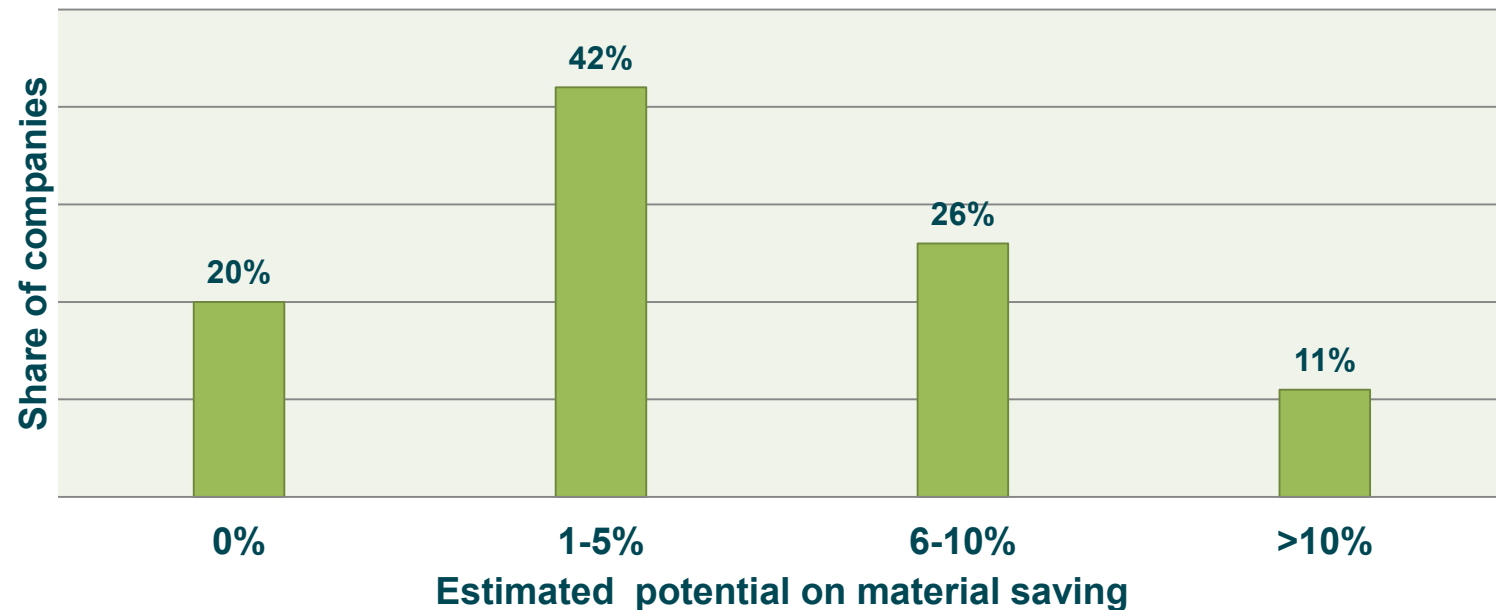
# COST PROPORTION PRODUCING SECTOR IN GERMANY



Quelle: Statistisches Bundesamt 2011

# SELF-ASSESSMENT OF PRODUCING COMPANIES

## POTENTIAL ON MATERIAL SAVINGS

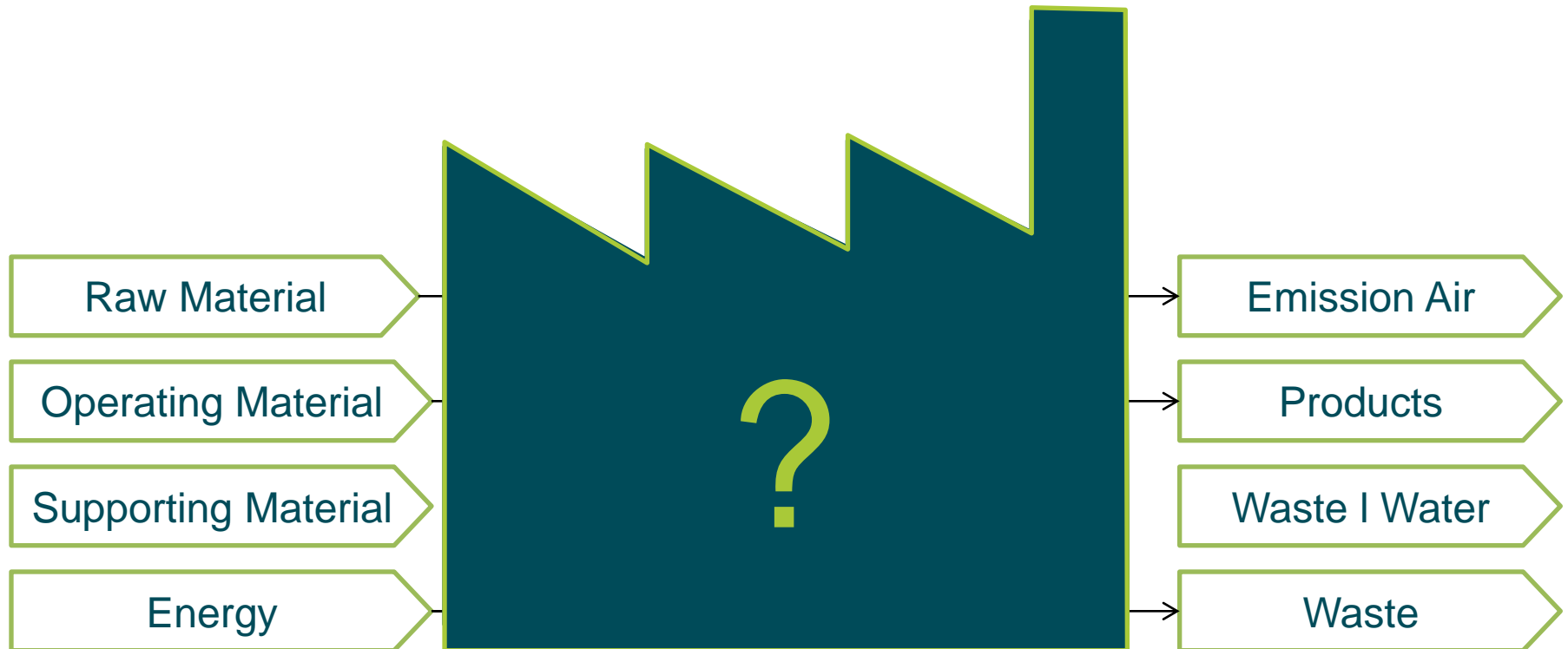


### Savings in production material:

- Self-estimation of producing companies: Ø 7% savings could be possible
- Other sources (e.g. DEMEA) 20%

# MATERIAL FLOW ANALYSIS / PIUS-CHECK

## HOW DOES IT WORK ?



1. Allocation of consumption
2. Action plan to improve efficiency



# RESOURCE EFFICIENCY IN GENERAL

## OVERVIEW OF EFFECTS OF MATERIAL FLOW

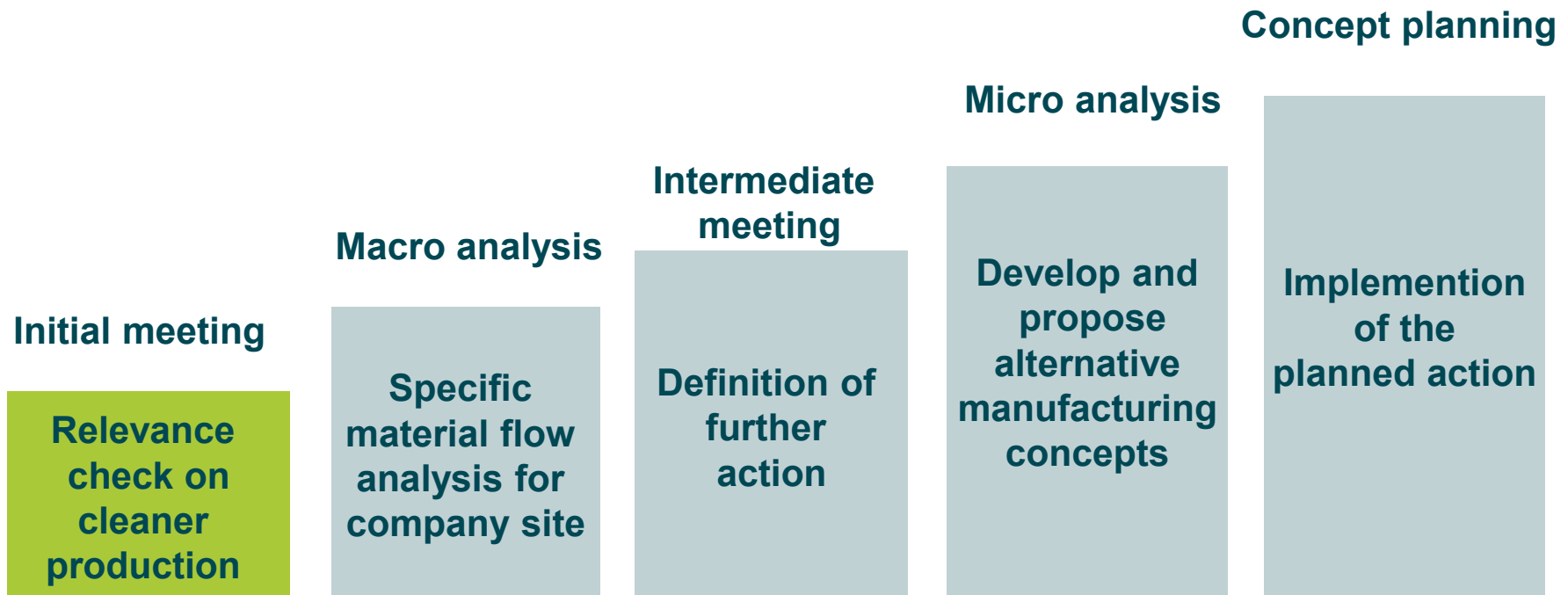
- Avoid of material in stock => lowered capital lock up
- Optimized cutting leads to minimized losses
- Reduced consumption of energy
- Optimized lot sizes
- Life-cycle-management
- inter connection of process-chains
- Resource efficient product design ( design for recycling..etc)
- Reduction of machine set-up time
- Increased Production capacity



Reduction of  
CO<sub>2</sub> -Output

# PIUS-CHECK<sup>®</sup>

## BASIC PROJECT STEPS



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# RESSOURCE EFFICIENCY IN WOOD INDUSTRY

## PROJECT DESIGN

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### **Targets:**

- **Support wood working companies**
- **Test the effectiveness of the material flow analysis in wood processing industry**
- **Find out about branch related starting points**

### **Participants:**

- **EFA**
- **Landesbetrieb Forst und Holz NRW**
- **Consultants**
- **3 Sawmills hard wood and soft wood with different production volume and technologies**




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# RESOURCE EFFICIENCY IN WOOD INDUSTRY

## ADDITIONAL BENEFITS FOR THE COMPANY

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### First results:

- Improvement Compressed air systems:  Savings: 78t CO<sub>2</sub>/a
- Validation of new heating system  Savings: 51t CO<sub>2</sub>/a
- Introduction of a new wood drying solution  Savings: 3200t CO<sub>2</sub>/a

### Other benefits:

- Integration of a cost indicator system to realize an up cycled use of material
- Optimized pre-selection of ordering

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# RESSOURCE EFFICIENCY IN WOOD INDUSTRY

## CONCLUSION

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### **Conclusion:**

The material flow analysis is a an appropriate method ( future leading ) to reach a cleaner production of wood products

### **Outlook:**

- Further companies along the chain of economic value of timber will be analyzed
- Preparation of a guideline for material flow analysis in the wood sector
- Transfer of knowledge and experience

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PROTECT RESOURCES.  
STRENGTHEN THE ECONOMY.

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**Thank you very much for your attention!**

Further information about the  
Effizienz-Agentur NRW under:  
**[www.cleanerproduction.info](http://www.cleanerproduction.info)**  
**[www.efanrw.de](http://www.efanrw.de)**

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