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Pellets from Brazilian Eucalyptus for electricity generation in Europe

BioGrace Laboratory

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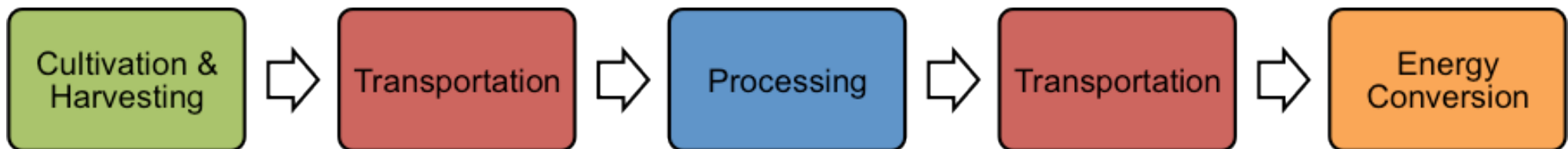
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1. Introduction

- Growing demand for woody biomass in the EU
 - Import from other regions
 - Pellets: easy handling, increased bulk density, facilitated transportation
 - Objectives:
 - Analysis of global warming potential of pellets
 - Produced from Brazilian Eucalyptus
 - Utilized in German power plant
 - Comparison with fossil fuel reference case
 - For production of electricity or heat & electricity (CHP)
 - Functional unit: g CO₂-eq./MJ electricity (or heat & electricity)
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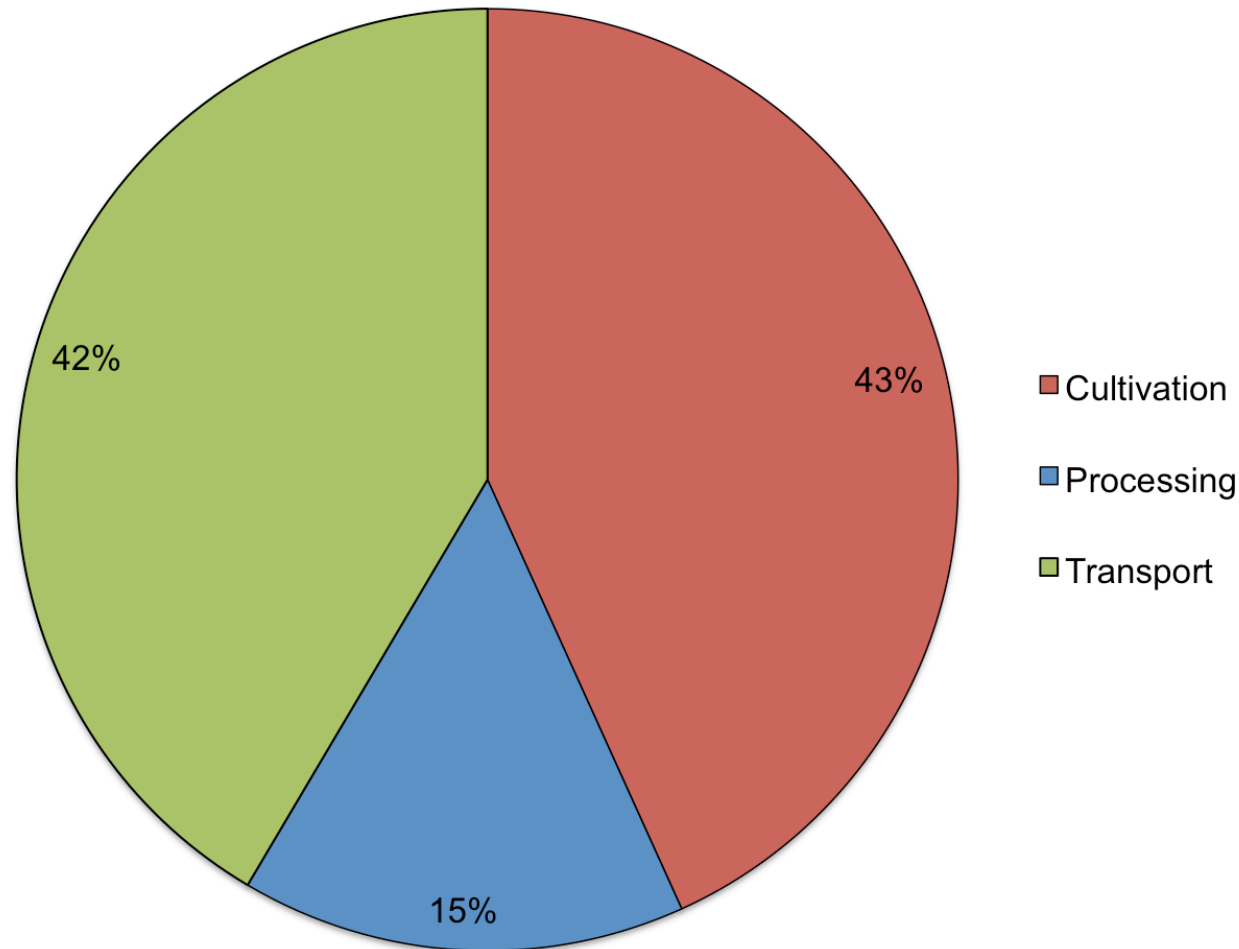
2. Methodology

- Renewable Energy Directive (RED) COM(2010)11 Annex I
 - On the sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling
- Fossil reference:
 - Electricity: 198 g CO₂-eq per MJ electricity
 - CHP: 106 g CO₂-eq per MJ heat and electricity
- Default value: 22 g CO₂-eq per MJ pellets
 - Wood briquettes or pellets from short rotation forestry (tropical and sub-tropical e.g. eucalyptus) – wood as process fuels



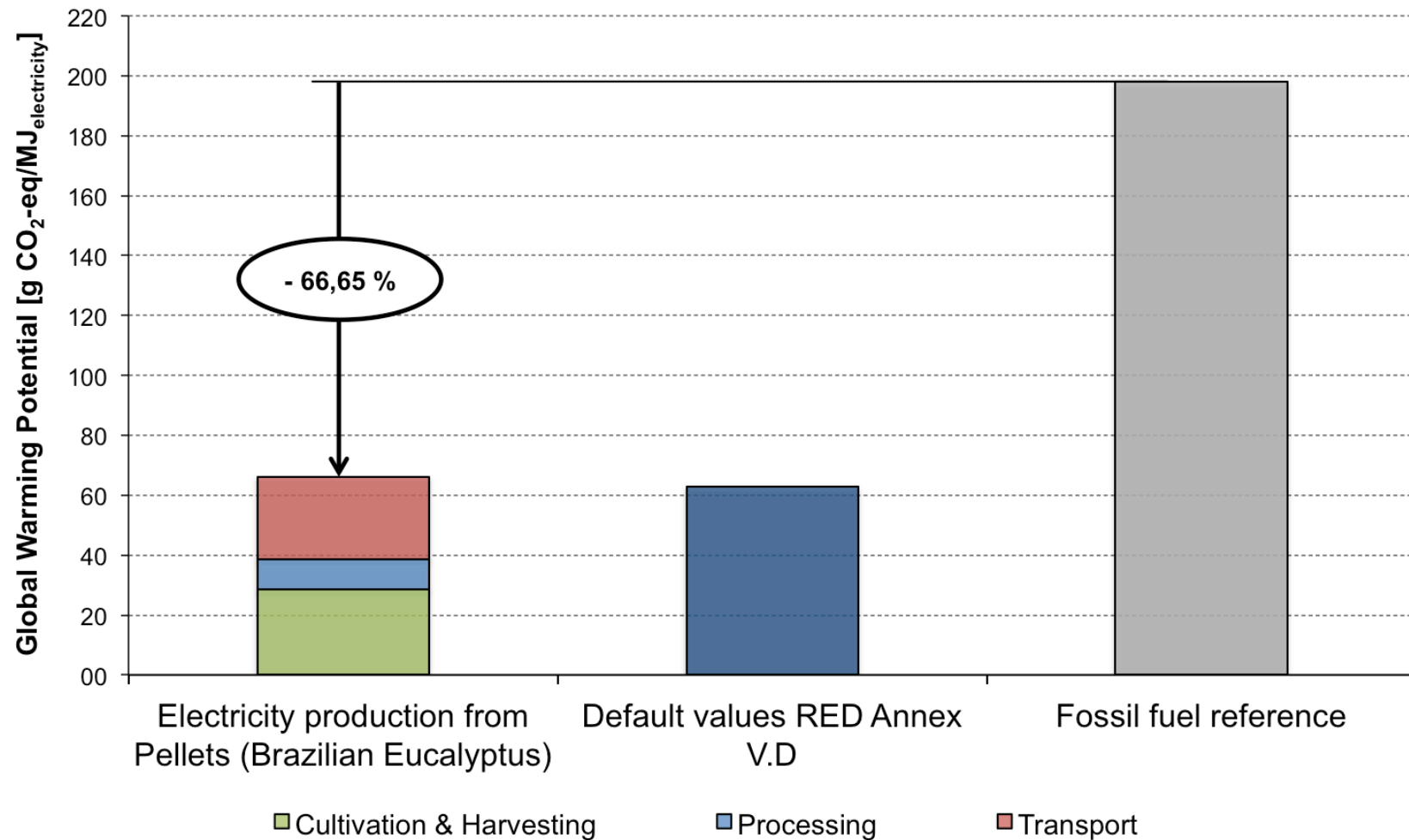
3. Results – Emission Distribution

- Total E: 23,1 g CO₂-eq/MJ pellets



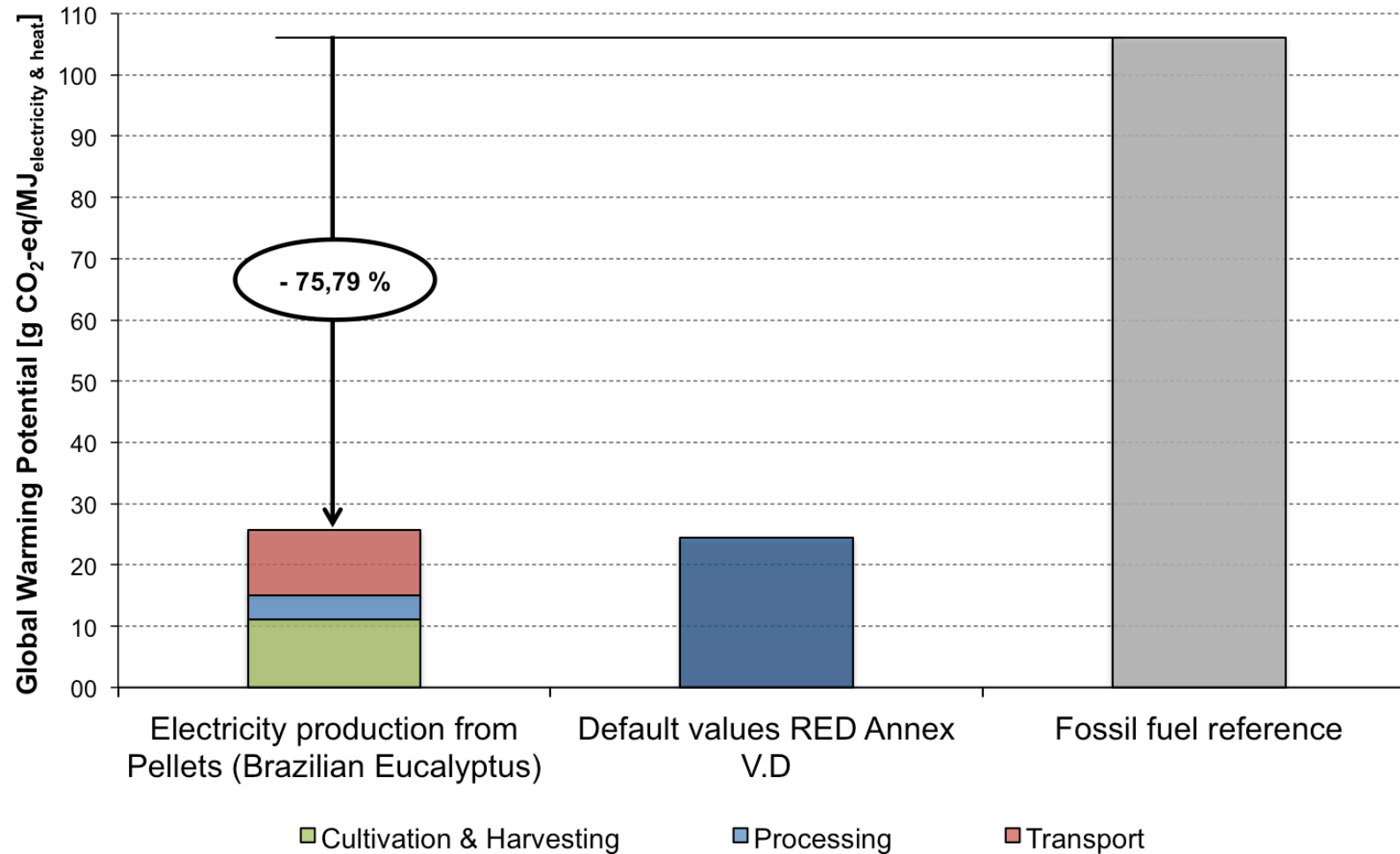
3. Results – Electricity

- Total EC: 66,0 g CO₂-eq/MJ electricity

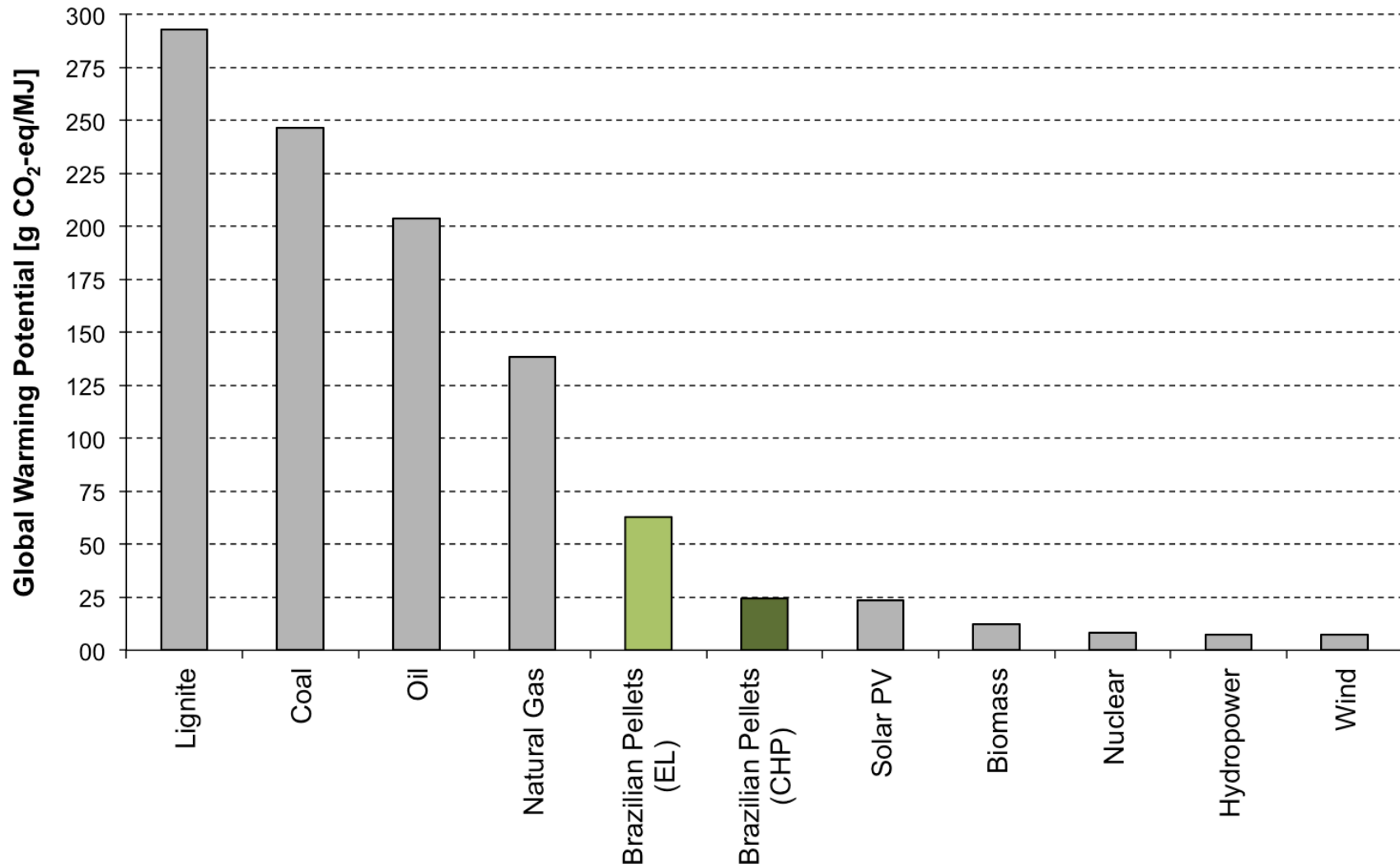


3. Results – CHP

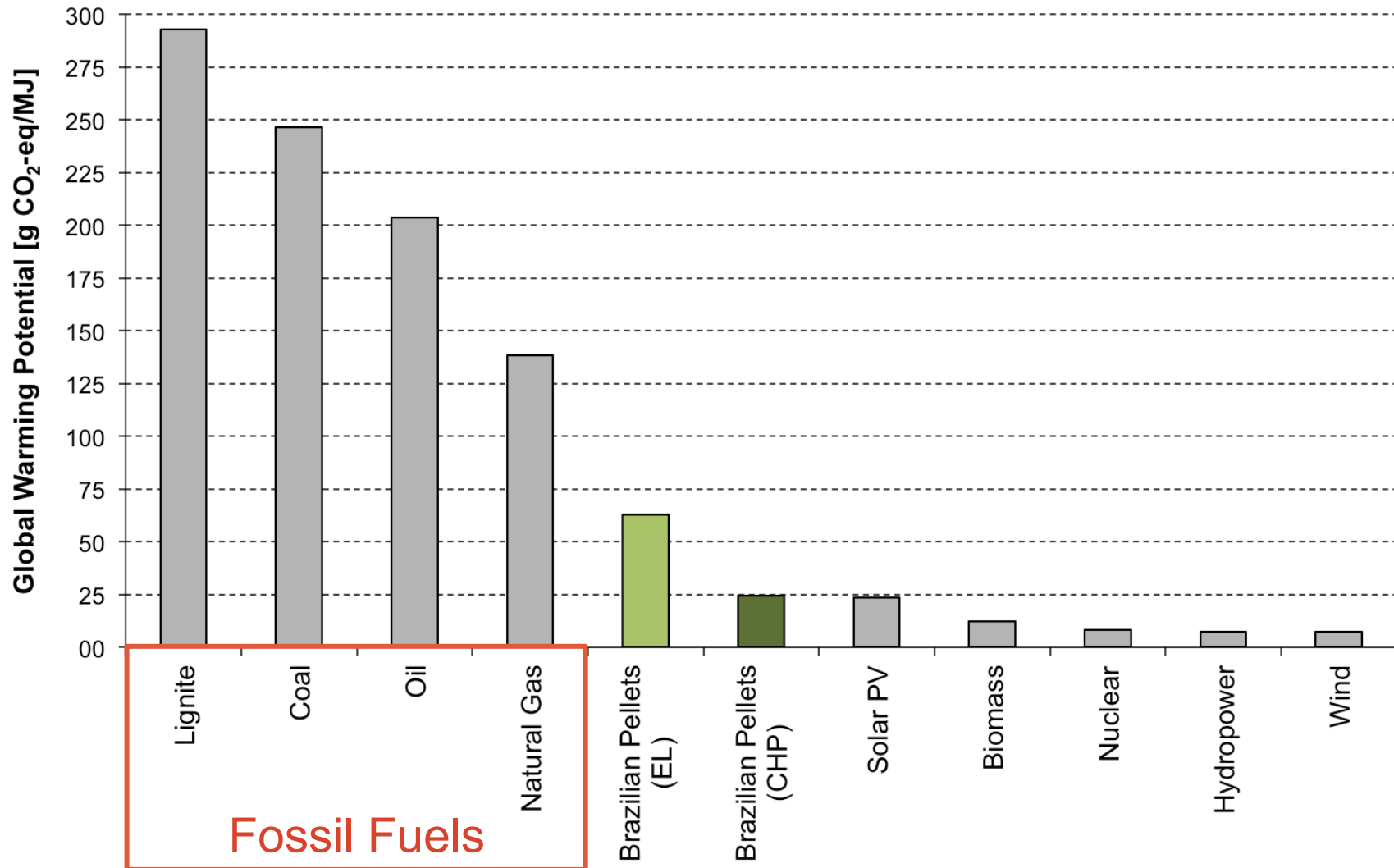
- Total EC: 25,7 g CO₂-eq/MJ electricity & heat



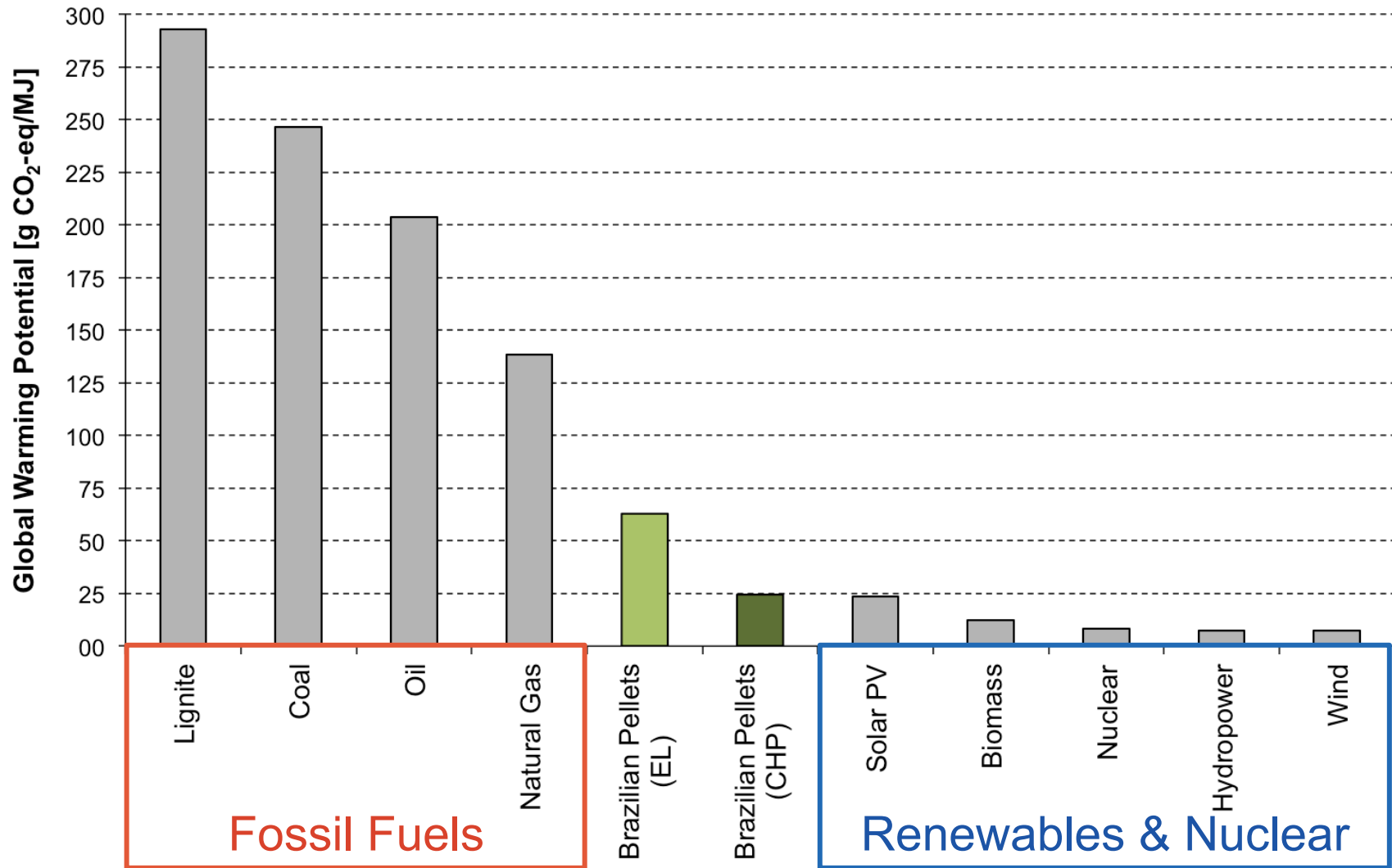
3. Results – Comparison between different LCE



3. Results – Comparison between different LCE



3. Results – Comparison between different LCE





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Thank you for your
attention!

Any questions?