



Biomasse Nahwärme in Salzburg – ein Beitrag zur Erreichung des Kyoto-Ziels

Biomass District Heating in Salzburg – Contribution towards Kyoto - Target

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Amt der Salzburger
Landesregierung
4/22 Bioenergie

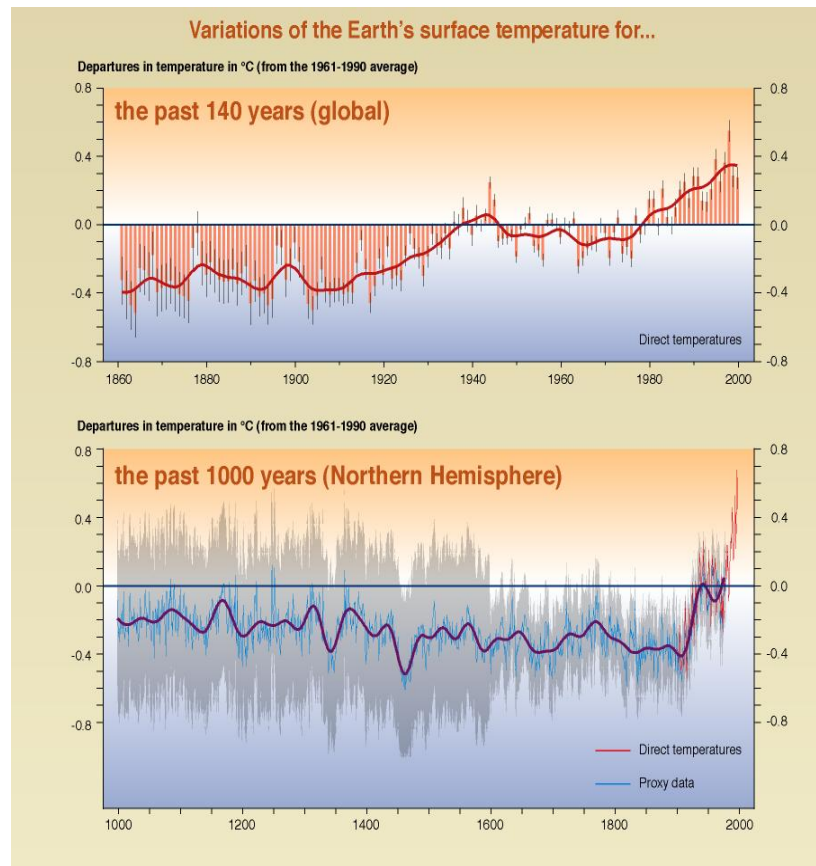


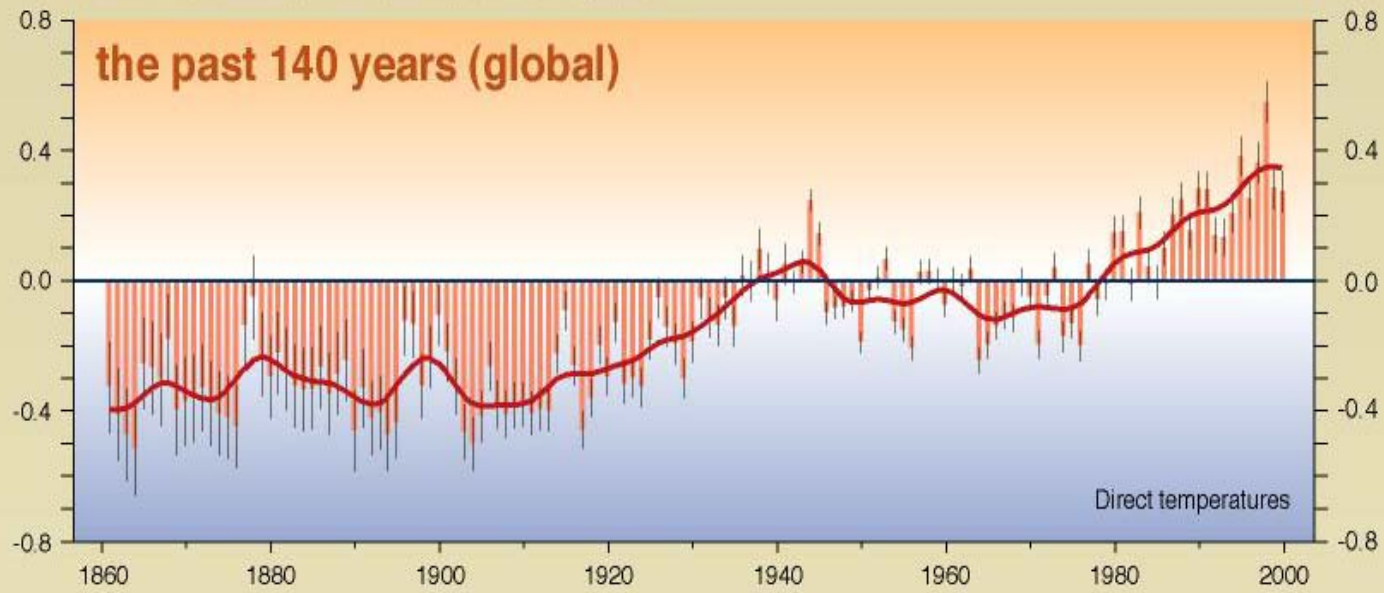
Content

- **Climate Change**
- Protocol of Kyoto - Salzburg
- District Heating in Salzburg
- Future Prospects

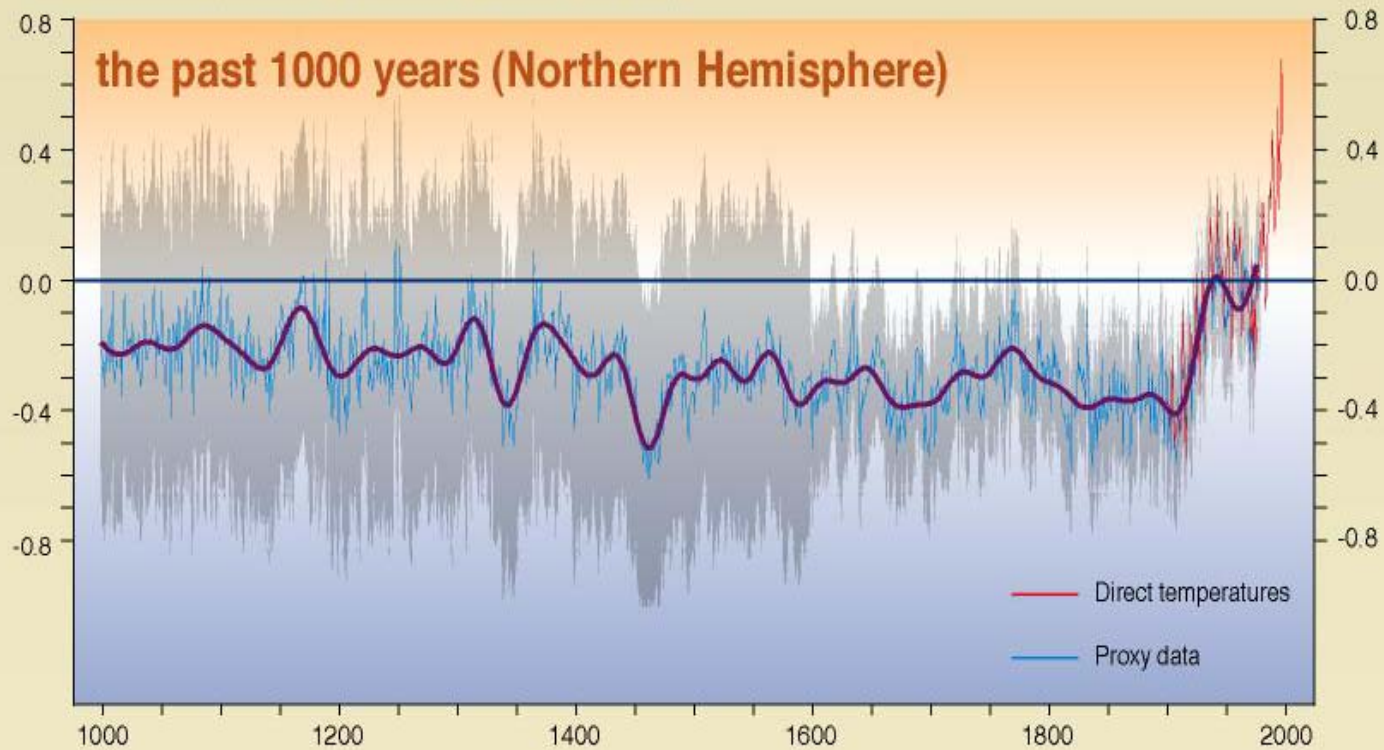


Energy & Climate – Atmospheric Temperature





Departures in temperature in °C (from the 1961-1990 average)



Pasterze
1940



Pasterze 2000





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Kyoto-Protocol

- Kyoto – Protocol
- EU Burden Sharing Agreement
 - ◆ Austria – 13% (1990)
- Austrian Climate Strategy
 - ◆ Heating – 28 % (1990)
- Today: Austria + 9.6 %
 - ◆ Penalty 5.9 Billion €/a
- Salzburg – Target for Households’ Heating is approx. 400.000 t/a

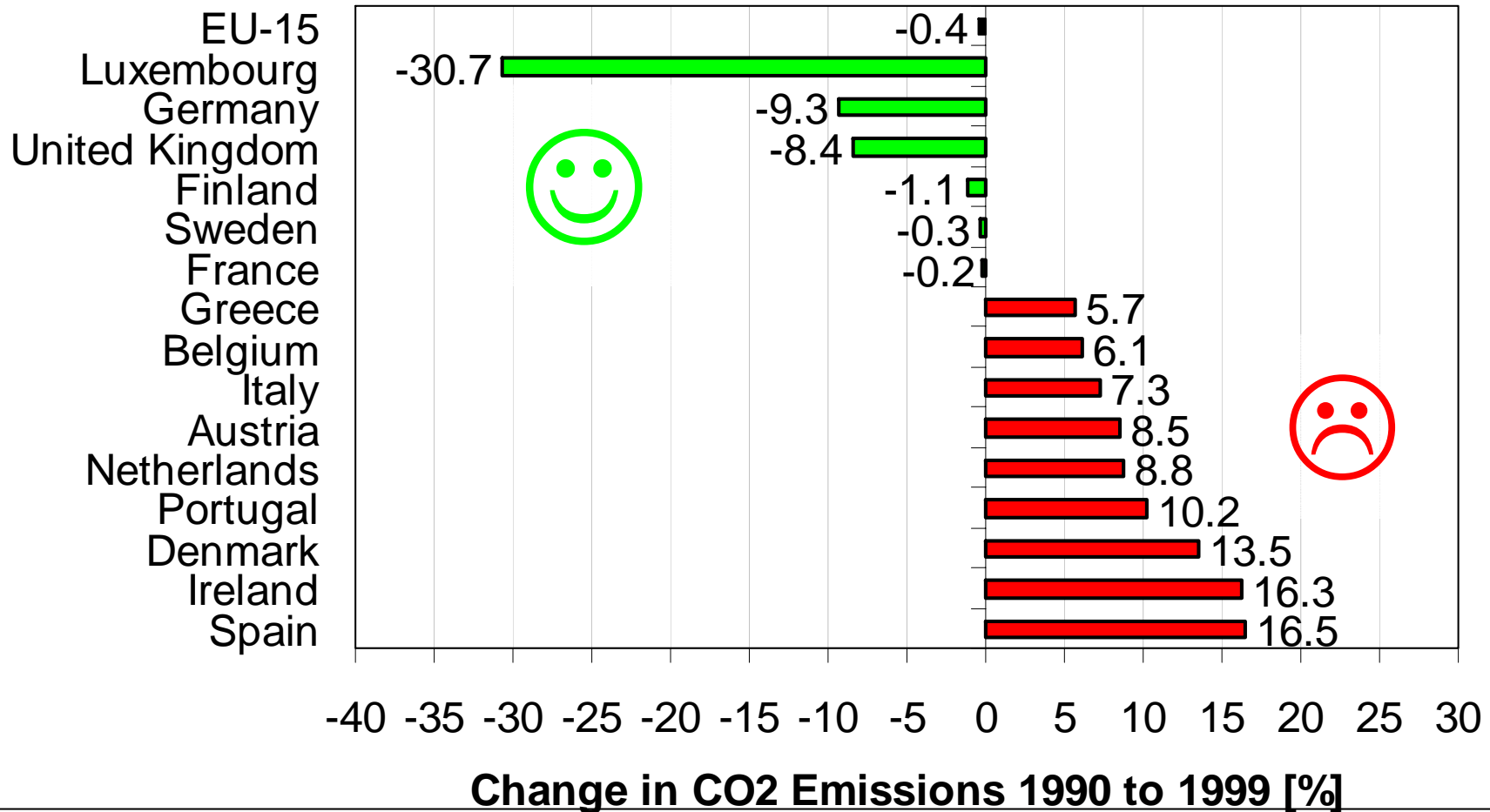


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Emission Trends 1990 - 1999





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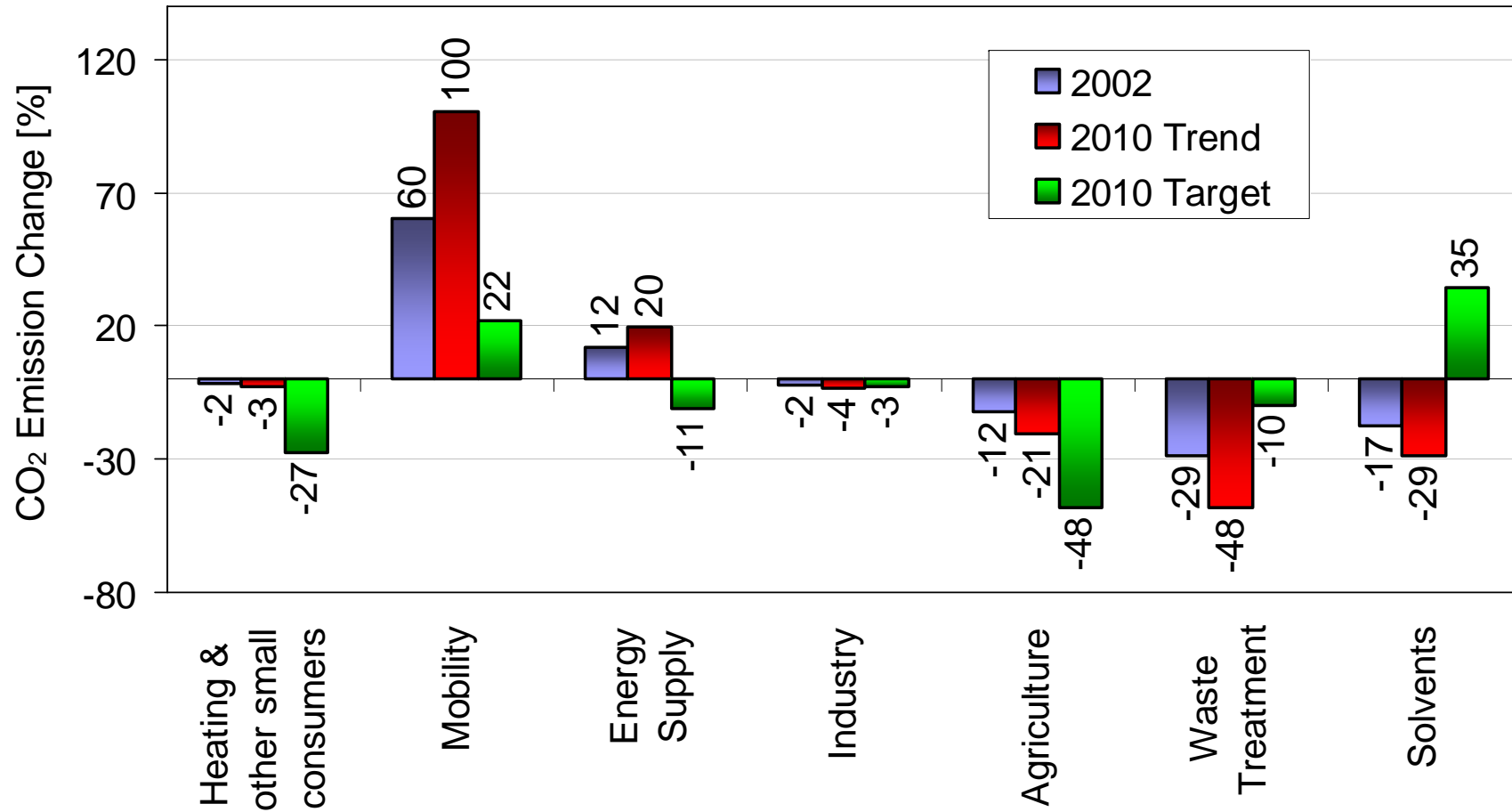


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CO₂ Emissions by Sectors



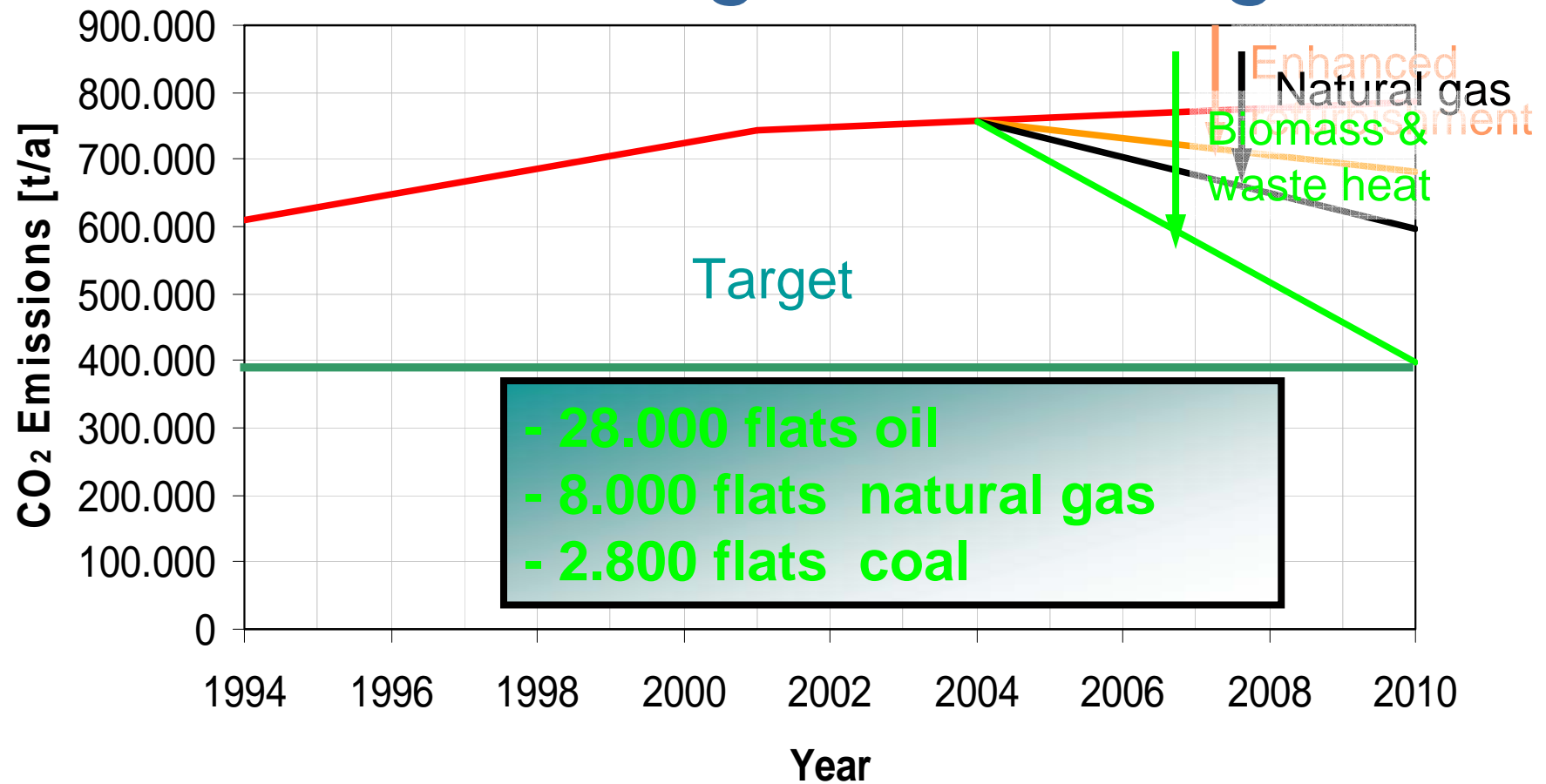


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CO₂ Emissions – Heating in Salzburg





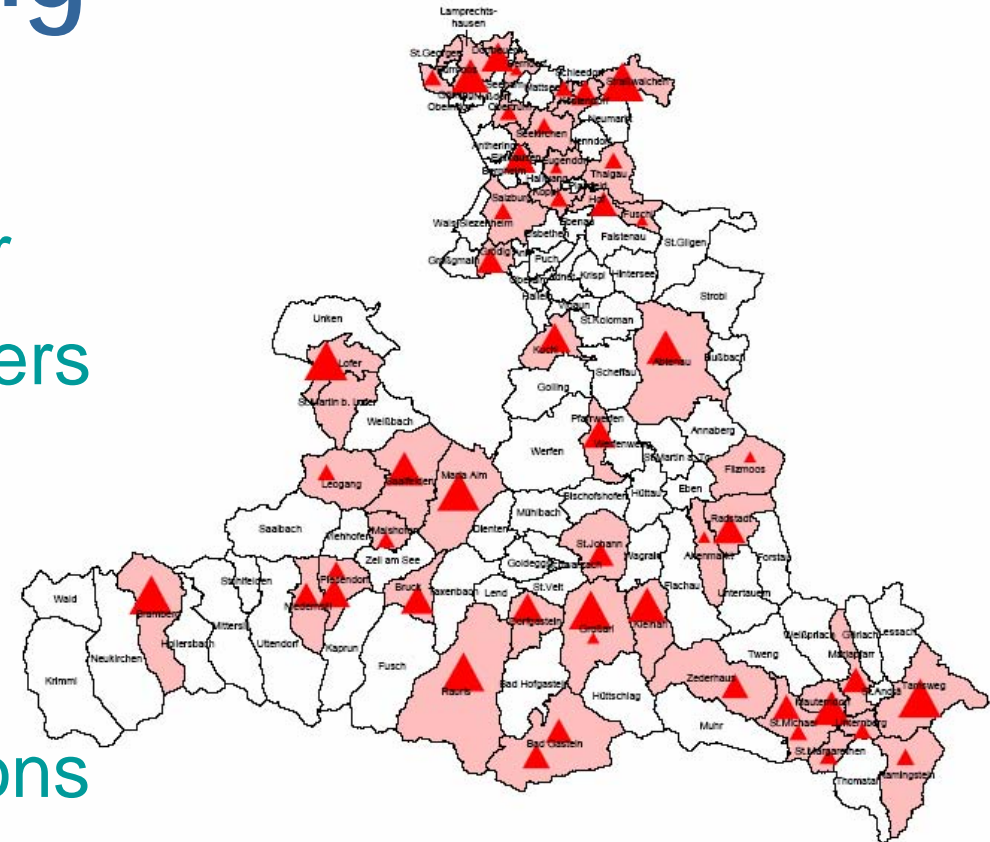
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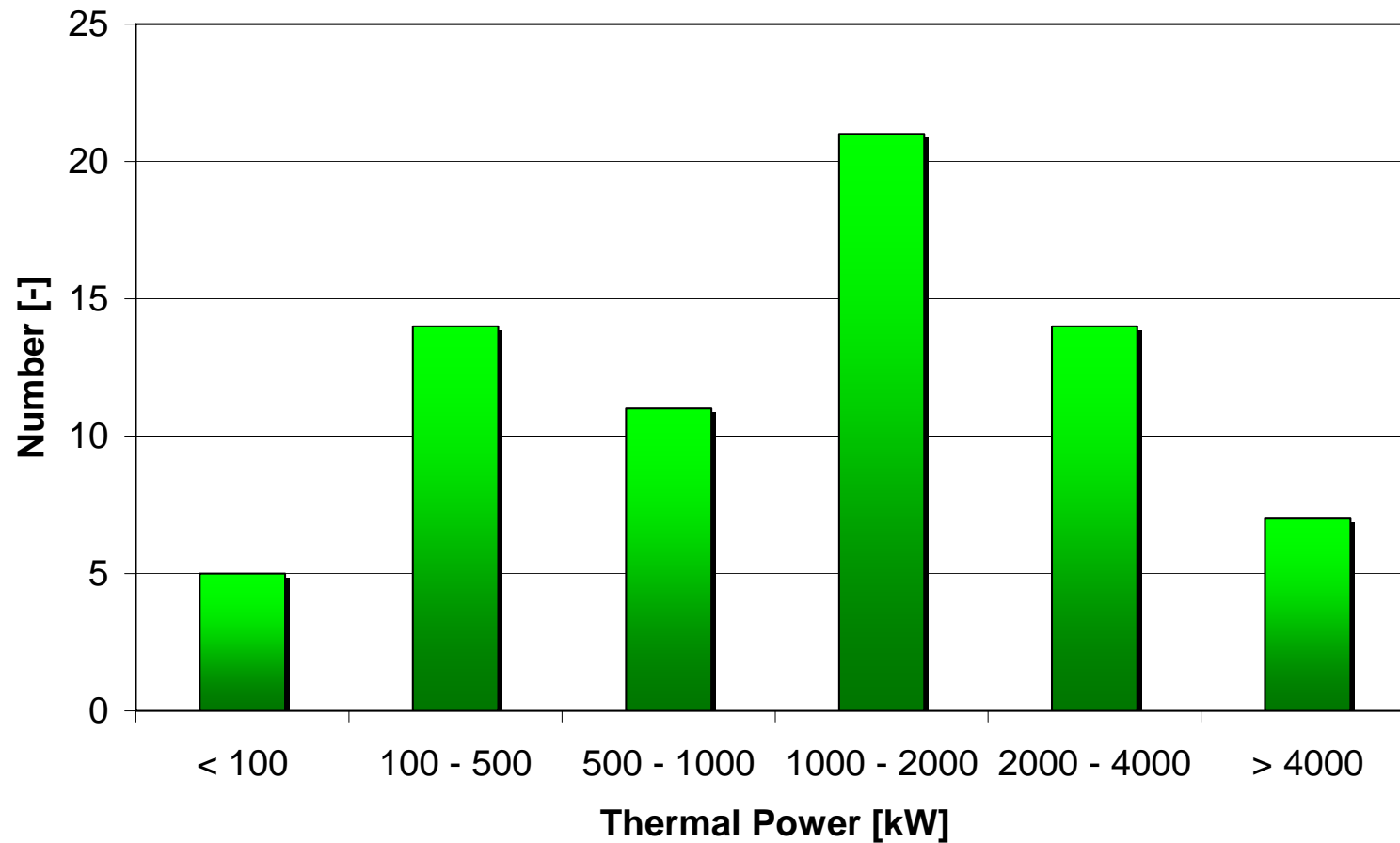
Biomass District Heating

- 44 Plants
- 69 MW thermal power
- Approx. 3000 costumers
- Approx. 175 km grid
- Substitutes approx. 23 Mio. l/a oil
- Reduces CO₂ emissions by 60,000 t/a



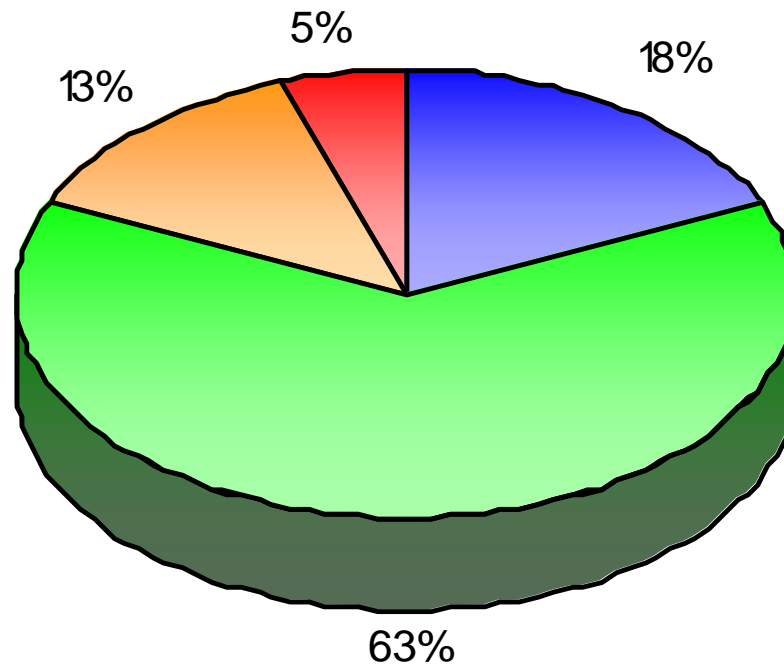


Biomass District Heating - Structure





Biomass District Heating - Structure



■ farmers ■ farm cooperatives ■ energy suppliers ■ others

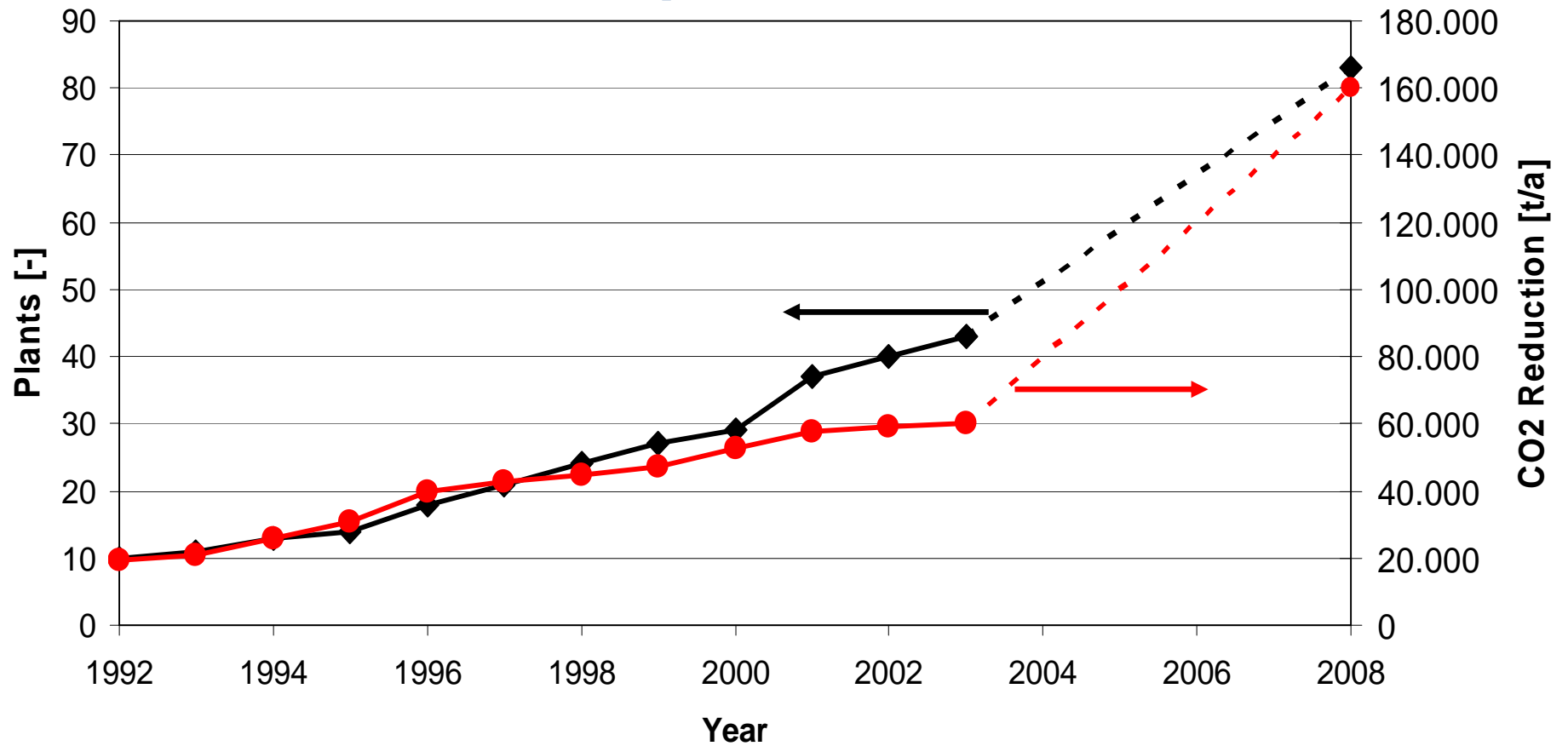


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Biomass District Heating - Development





Wood – Annual Increment vs. Current Use

Country	Reserve	Annual Increment	Current Use
Steiermark	770.000	7.449	4.449
Niederösterreich	195.771	5.502	4.095
Kärnten	146.323	4.173	2.871
Oberösterreich	140.390	4.154	3.054
Tirol	98.625	2.112	1.323
Salzburg	85.083	2.064	1.471
Burgenland	28.531	977	944
Vorarlberg	23.368	440	286
Wien	2.500	52	35
Austra	988.299	27.266	19.528

Approx. 70% of annual increment used!



Future Prospects

- CHP (14 Plants)
- Increasing Part of energy suppliers
- Combined Biogas – Biomass Plants
- Biomass drying and logistic centres
- Industrial Waste Heat and Biomass for region Hallein - Salzburg



Heat Sources







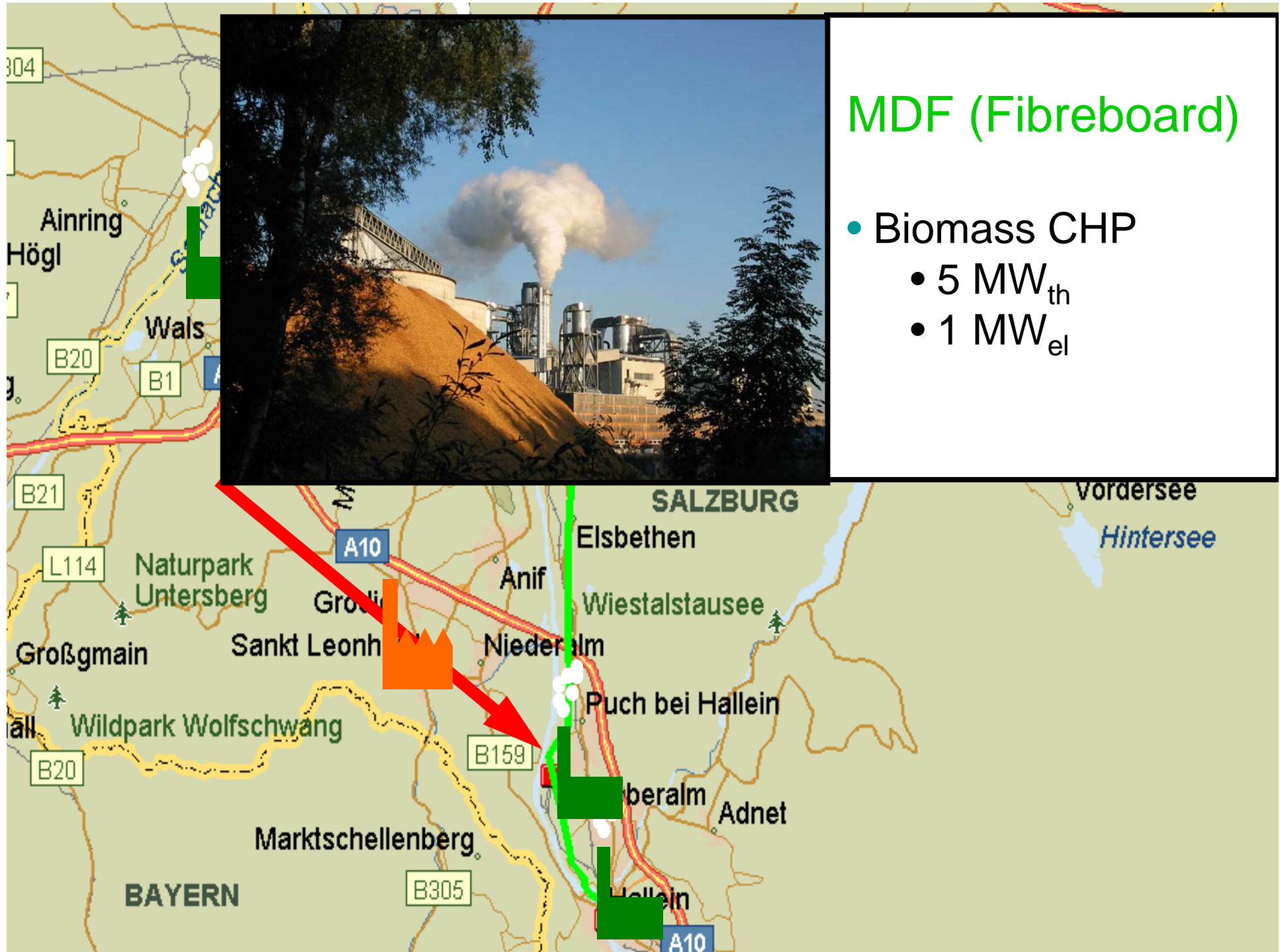
m-real (pulp & paper industry)

- Biomass CHP
 - 30 MW_{th}
 - 5,1 MW_{el}
- Waste heat
 - 1,8 MW ECO
 - 7 MW heat transformer
- Liquor combustion
 - 3,7 MW_{th}
- Biogas CHP
 - 1,15 MW_{th}
 - 0,85 MW_{el}



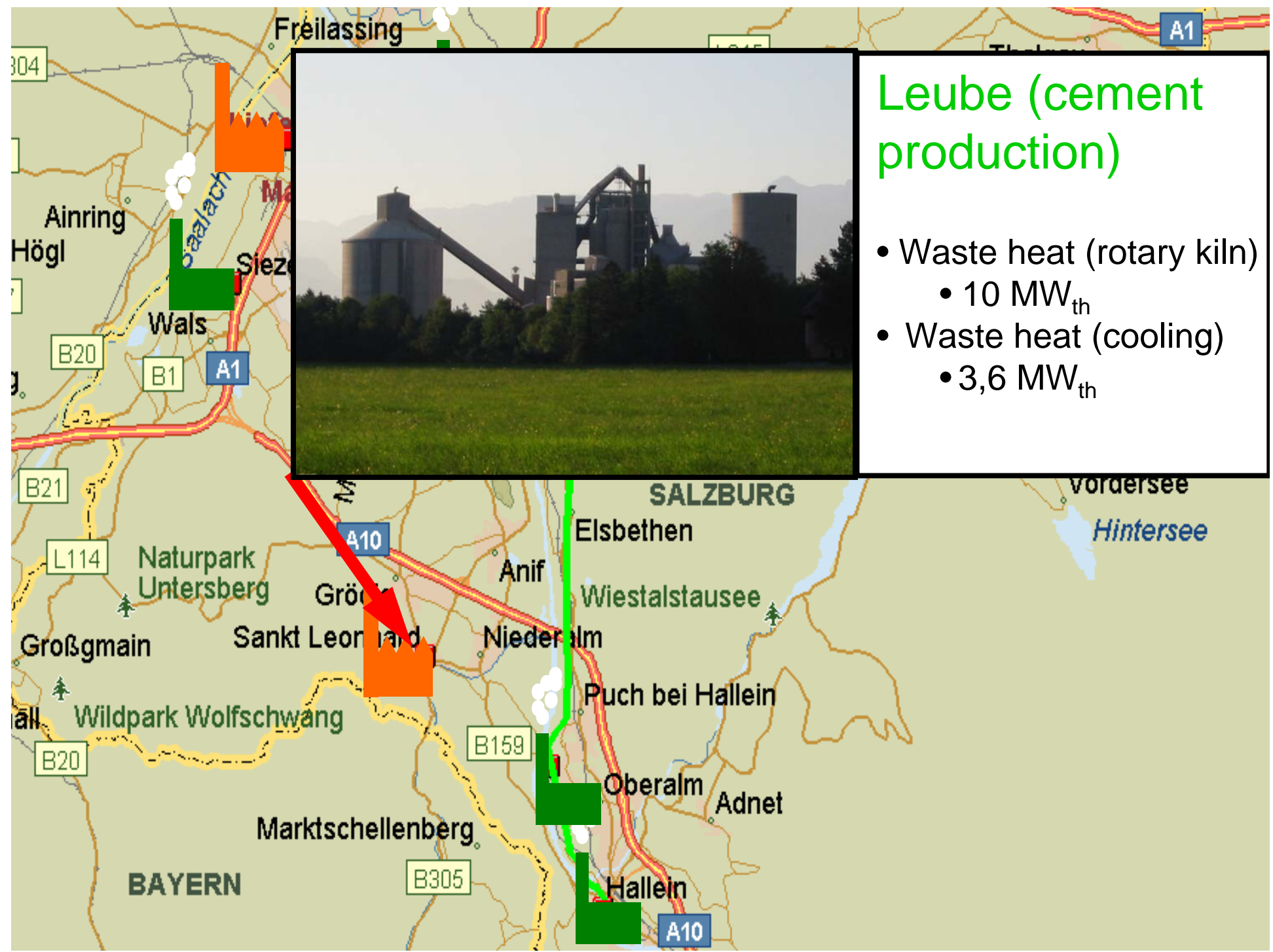
MDF (Fibreboard)

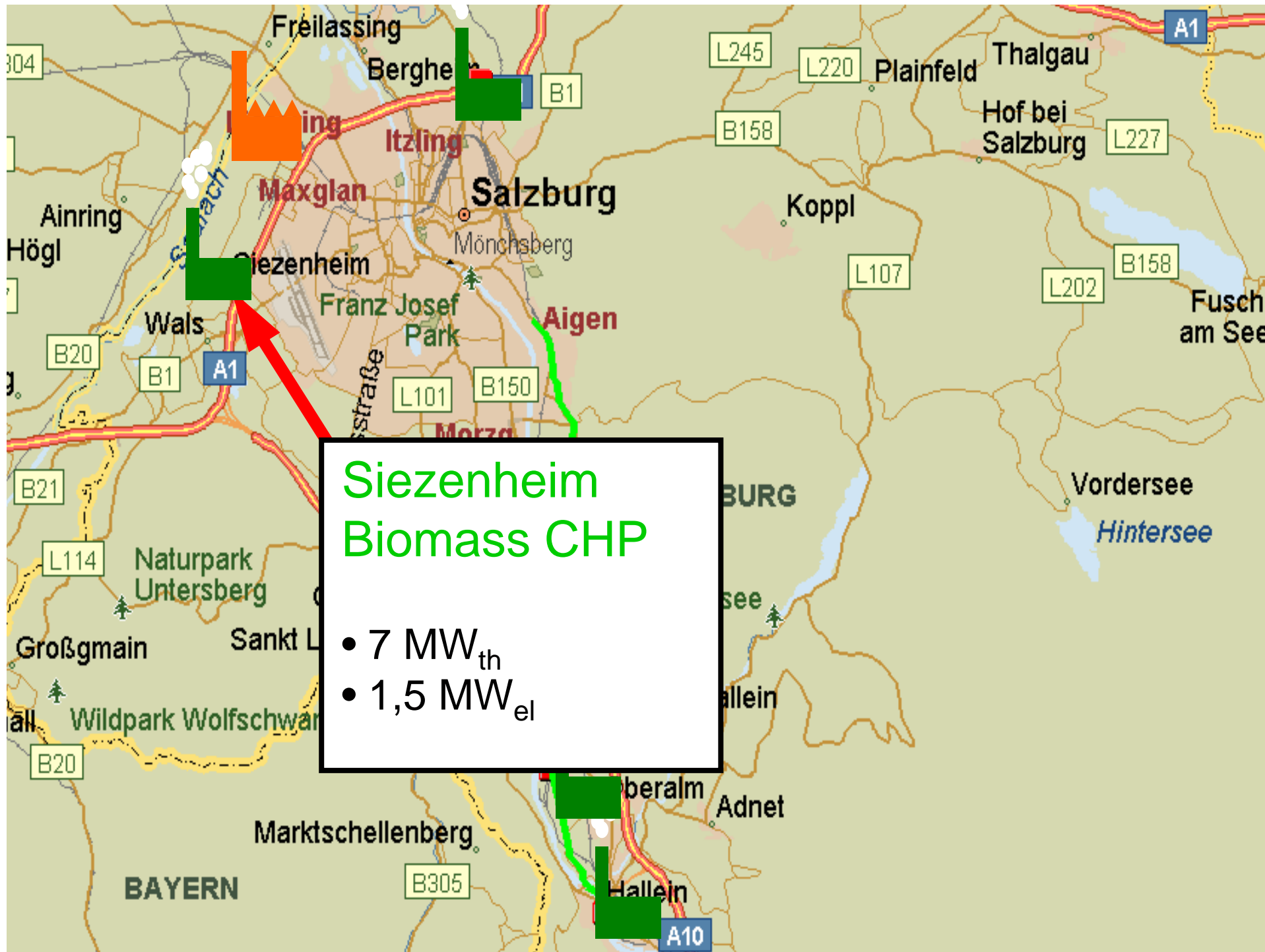
- Biomass CHP
 - 5 MW_{th}
 - 1 MW_{el}

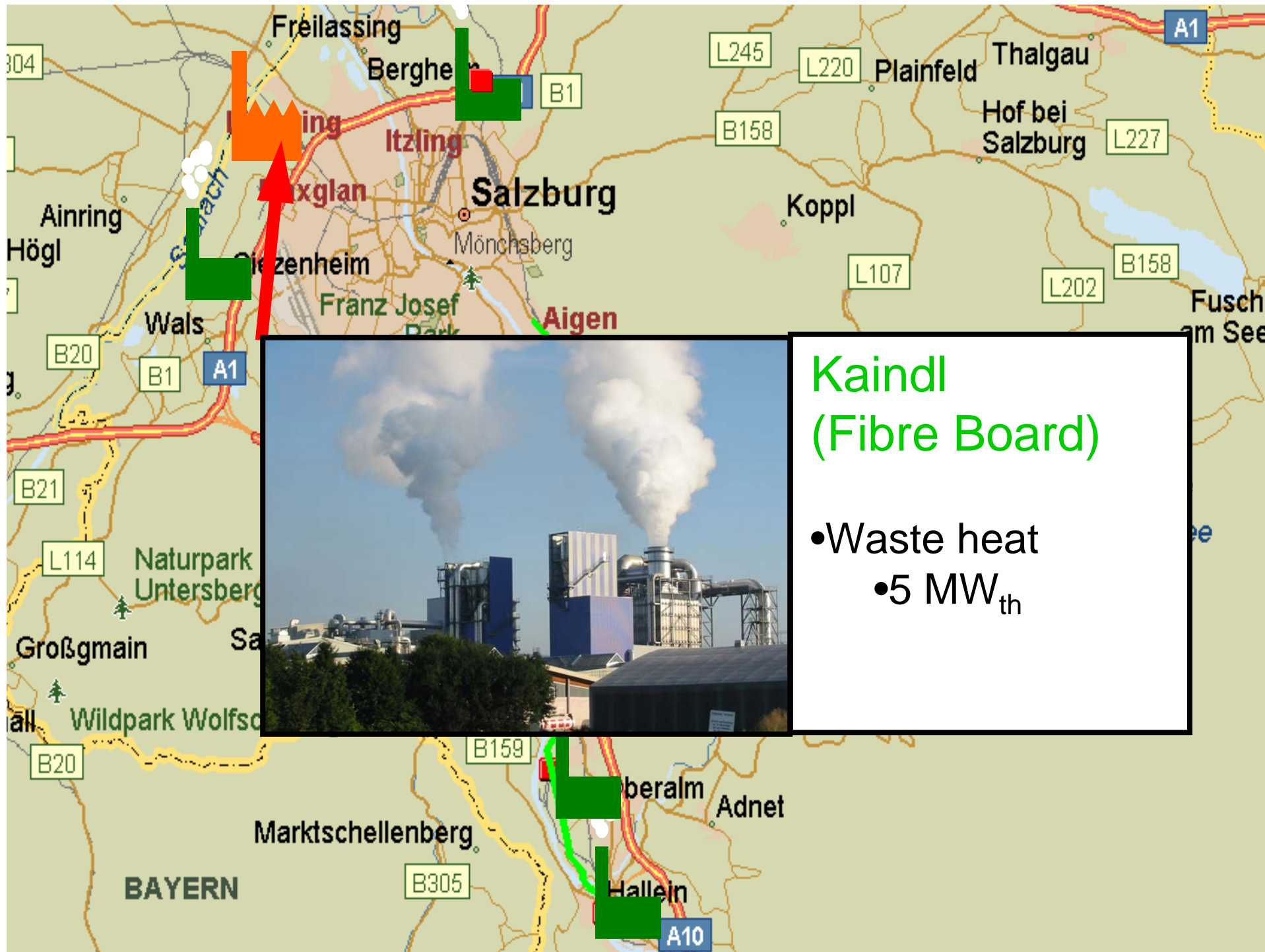


Leube (cement production)

- Waste heat (rotary kiln)
 - 10 MW_{th}
- Waste heat (cooling)
 - 3,6 MW_{th}

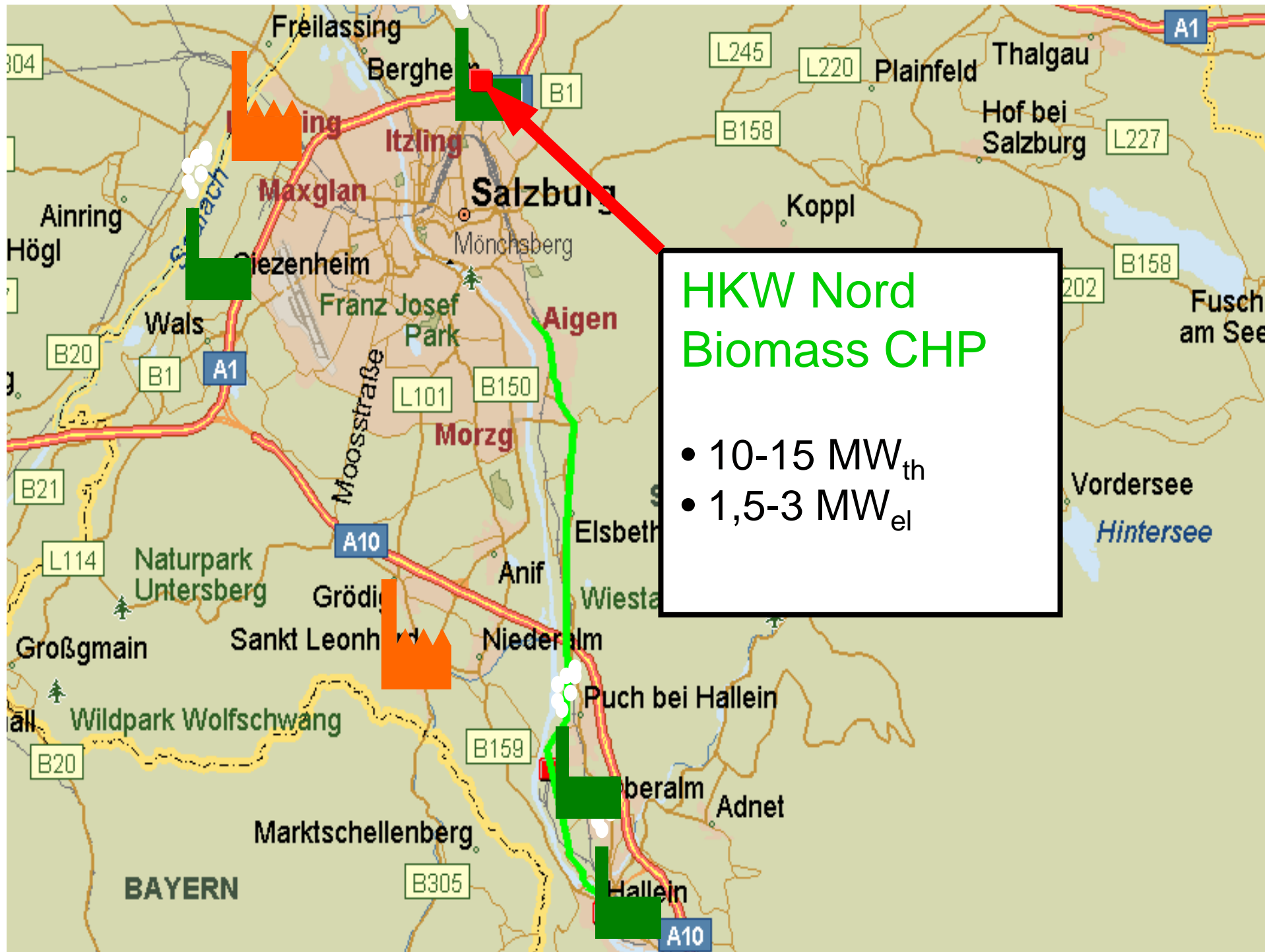






**Kaindl
(Fibre Board)**

- Waste heat
 - 5 MW_{th}





Summary

- Biomass District Heating
 - ◆ Renewable, local energy resource
 - ◆ 20 % reduction of CO₂ emissions for heating
 - ◆ Increasing importance of CHP
 - ◆ Still more efforts needed



**Thank you for
your attention !**