

## Contents

1. Introduction .....	1
1.1 WtE in a European context.....	2
1.2 WtE & the DSR.....	6
1.3 Waste streams & WtE technologies .....	7
1.4 Conclusion.....	13
2. Drivers & Barriers to WtE Development.....	14
2.1 Political & legislative .....	15
2.2 Economic.....	18
2.3 Infrastructural .....	21
2.4 Technical & environmental .....	23
2.5 Social .....	25
2.6 Conclusion.....	27
3. WtE & waste management in the DSR.....	29
3.1 Current MSW management & potential gaps.....	30
3.2 Waste generation & intensity .....	36
3.3 WtE as an alternative fuel source .....	40
3.4 Summary.....	46
4. Case Study: Thermal Waste Utilization Plant in Zwentendorf.....	47
4.1 Zwentendorf plant design .....	48
4.2 Political & legislative challenges.....	52
4.3 Economic challenges.....	55
4.4 Infrastructural challenges .....	58
4.5 Technical & environmental challenges.....	61
4.6 Social acceptance .....	63
4.7 Conclusion & identified best practices.....	66
References.....	69

## List of Tables and Figures

Table 1. Waste-embedded energy sent to incineration or landfill/disposal in 2012 in the EU-28..8	
Table 2. Estimated capacity gap as indicator of future potential for WtE development.....	32
Table 3. Emissions of Zwentendorf WtE plant.....	62
Figure 1. WtE processes in relation to the waste hierarchy .....	3
Figure 2. Circular economy diagram.....	5
Figure 3. Waste origin and method of collection .....	9
Figure 4. Municipal solid waste treatment techniques and their products.....	11
Figure 5. Distribution of MSW by treatment type, 2016 .....	31
Figure 6. Development in MSW generation, 2007–2016 .....	37
Figure 7. Waste intensity (kg per thousand euro, 2010 chain-linked volumes) .....	38
Figure 8. Share of RES by sector and in total (%), 2016) .....	41
Figure 9. % of gross electricity production from waste.....	42
Figure 10. Distribution of electricity produced from waste by source.....	43
Figure 11. % of gross heat production from waste.....	44
Figure 12. Distribution of heat produced from waste by source.....	45
Figure 13. Zwentendorf plant technology scheme .....	49
Figure 14. Thermal waste treatment plants and railway network in Austria .....	59