

TABLE OF CONTENTS

	<u>Paragraph</u>
Chapter 1 Introduction – Christopher Jones	1.1
Chapter 2 Definitions of renewable energy – Niels Ladefoged	
1. Introduction	2.1
2. Key definitions of the Directive	
2.1. Definition of energy from renewable sources	2.4
2.2. Definitions of aerothermal, geothermal and hydrothermal energy	2.16
2.3. Definition of biomass, bioliquids and biofuels	2.22
2.4. Conclusion	2.28
Chapter 3 The determination and enforceability of national renewable energy targets – Hans van Steen	
1. The character of the targets – indicative or binding	
1.1. Background – targets in existing legislation.....	3.1
1.2. The Commission’s 2007 Renewable Energy Road Map.....	3.7
1.3. Institutional reactions to the Renewable Energy Road Map: the March 2007 European Council Conclusions and the Thomsen Report of the European Parliament	3.12
2. The 20% renewable energy target and the 10% transport sector targets	3.19
2.1. Accounting methods.....	3.20
2.2. Sectoral targets or one overall renewable energy target	3.30
3. Sharing the effort	
3.1. Sharing the effort according to renewable energy potential versus an effort-sharing based on a flat rate/GDP per capita modulated approach.....	3.37
3.2. The targets contained in the Directive as adopted	3.48
4. Effectively enforcing national targets.....	3.54
4.1. The indicative trajectory	3.56
4.2. Effectively designed measures.....	3.63
4.3. National Action Plans.....	3.68
4.4. Concluding remarks on targets and enforceability	3.80

Chapter 4 “Trading” renewable energy consumption and types of national support schemes – Tom Howes

1.	Background	4.1
1.1.	Guarantees of origin and the scope for trading under the Renewable Electricity Directive.....	4.2
1.2.	Creation of guarantees of origin.....	4.4
1.3.	Trading guarantees of origin: consumer market and target compliance....	4.6
1.4.	Framework for harmonisation of support schemes	4.8
2.	National Support Schemes.....	4.10
2.1.	Feed in tariffs	4.12
2.2.	Renewable energy obligations/quotas/green certificates	4.14
2.3.	Scheme improvements and assessment.....	4.16
2.3.1.	Policy effectiveness	4.19
2.3.2.	Policy efficiency.....	4.25
2.4.	Support scheme cooperation	4.32
3.	The new Directive	4.37
3.1.	Statistical transfers.....	4.45
3.2.	Joint projects between Member States	4.53
3.3.	Joint support schemes.....	4.60
3.4.	Joint projects between Member States and third countries	4.66
3.4.1.	New interconnector capacity and imports of electricity from third countries (Art. 9(3))	4.72
3.4.2.	Third countries as “Member States”	4.74
3.5.	Potentials – foreseen scope for “virtual” trade	4.81
3.6.	Forecast document.....	4.86
3.7.	Transparency platform.....	4.88
3.8.	Conclusions on trade development.....	4.90
3.9.	Guarantees of origin	4.93
3.9.1.	Consumer concerns	4.95
3.9.2.	Granting guarantees of origin.....	4.97
3.9.3.	The regulatory regime.....	4.98
3.9.4.	Consumer concerns: “additionality”.....	4.103
3.9.5.	Conclusion	4.105

Chapter 5 Administrative barriers – Emese Kottas

1.	Introduction	5.1
2.	Authorisation, certification and licensing procedures	
2.1.	Typical requirements for the authorising, certification and licensing of renewable energy technologies	5.7
2.2.	Necessary and proportionate permitting procedures	5.12
2.3.	Specific requirements for permitting procedures.....	5.19
2.4.	Information to applicants.....	5.29
3.	The role of technical specifications in support schemes	5.33
4.	Local and regional planning.....	5.37

Table of contents

5.	Policies to increase renewable energy in buildings	5.43
5.1.	Minimum levels of renewable energy in buildings.....	5.47
5.2.	Public buildings	5.59
5.3.	Promotion of energy efficient technologies in buildings	5.61
6.	Information and training.....	5.65
6.1.	Information provisions.....	5.66
6.2.	Certification and qualification schemes for installers.....	5.78
7.	Conclusions	5.90

Chapter 6 Grid issues – *Andrea Herscuth*

1.	Introduction - the importance of energy infrastructure in reaching the 2020 targets	6.1
2.	Background: grid issues in the Renewable Electricity Directive and internal electricity market legislation.....	6.8
2.1.	Grid system issues in the Renewable Electricity Directive.....	6.9
2.2.	The legislation on the internal electricity market	6.12
3.	Renewable Energy Directive - electricity infrastructure development and operation	
3.1.	Introduction	6.21
3.2.	Development of electricity infrastructure	6.23
3.2.1.	Infrastructure development	6.24
3.2.2.	Rules on the sharing and bearing of costs	6.44
3.3.	Operational rules of electricity grid infrastructure relating to renewable electricity	6.54
3.3.1.	Guaranteeing transmission and distribution	6.57
3.3.2.	Priority or guaranteed access.....	6.58
3.3.3.	Priority dispatch	6.59
3.3.4.	Minimising curtailment of renewable electricity	6.60
3.3.5.	Transmission and distribution charges	6.68
4.	Other energy infrastructures	
4.1.	Introduction	6.69
4.2.	The gas network and access for biogas	6.70
4.2.1.	Network development.....	6.71
4.2.2.	Access rules.....	6.73
4.2.3.	Tariffs	6.78
4.3.	District heating and cooling.....	6.79
5.	Conclusion	6.89

Chapter 7 Renewable energy in transport (including biofuels) – *Paul Hodson*

1.	Introduction	7.1
2.	The 10% target for renewable energy in transport	
2.1.	The need for a sectoral transport target.....	7.3
2.2.	The energy sources that count towards the 10% target.....	7.8

Table of contents

2.3.	How the contribution of renewable energy sources in transport is calculated?	7.10
3.	Sustainability scheme for biofuels and bioliquids: overview	
3.1.	Components of the scheme: criteria, consequences and checking	7.17
3.2.	The types of biomass covered by the sustainability scheme.....	7.20
3.3.	The setting of more stringent sustainability requirements.....	7.21
4.	Consequences of failure to respect the sustainability criteria.....	7.24
5.	Sustainability criteria: minimum greenhouse gas performance	
5.1.	Criteria	7.26
5.2.	Calculation of greenhouse gas performance	7.34
5.3.	Default values for greenhouse gas performance.....	7.39
5.4.	When default values can be used.....	7.45
5.5.	The calculation of ‘actual values’.....	7.50
6.	Sustainability criteria: land use.....	7.53
6.1.	Land from which raw material may never be taken (even if the status of the land is unchanged).....	7.54
6.2.	Land from which raw material may not be taken if the status of the land has changed since January 2008	7.59
7.	Sustainability criteria: “cross-compliance”	7.62
7.1.	The cross-compliance criterion	7.63
7.2.	The cross-compliance rule under the common agricultural policy.....	7.64
7.3.	Extension of the cross-compliance rule through the Renewable Energy Directive	7.69
8.	Checking of compliance with the sustainability criteria	7.74
8.1.	Claims to be made by economic operators	7.75
8.2.	The chain of custody.....	7.79
8.3.	Member States’ role in checking claims.....	7.86
8.4.	Voluntary schemes	7.88
8.5.	Agreements with third countries	7.93
9.	Next steps for the sustainability scheme	7.94
9.1.	Completing the sustainability scheme.....	7.95
9.2.	Updating the sustainability scheme	7.96
9.3.	Reviewing the sustainability scheme	7.97
10.	Reporting on the impact of biofuels and bioliquids	
10.1.	Reporting obligations of Member States.....	7.98
10.2.	Reporting obligations of the Commission	7.99

Chapter 8 Calculating the share of renewable energy – *Niels Ladefoged*

1.	Introduction	8.1
2.	Electricity produced from renewable energy sources.....	8.5
3.	Dealing with heating and cooling.....	8.17
4.	Accounting for energy consumption in transport for the purpose of the general target	8.28
5.	Adding the elements and adjusting for flexibility mechanisms and sustainability criteria	8.36

Table of contents

6.	Gross final consumption of energy as reference for the target	8.38
7.	Accounting for heat pumps	
7.1.	Introduction	8.46
7.2.	The primary energy efficiency criterion	8.52
7.3.	Estimating the ambient energy harnessed.....	8.59

Page

APPENDICES

Appendix 1	Directive 2009/28/EC (“The Renewable Energy Directive”).....	229
Appendix 2	Template for National Renewable Energy Action Plans under Directive 2009/28/EC	309
Appendix 3	Directive 2001/77/EC (“The Renewable Electricity Directive”).....	347
Appendix 4	Directive 2003/30/EC (“The Biofuels Directive”).....	361
INDEX	369