

---

# Index

---

- 20-20-20 targets 34–5, 37, 49, 245, 515
- accountability
  - transnational climate change policy/  
governance 28–9
- Ad Hoc Working Group on the  
Durban Platform for Enhanced  
Action 11
- agriculture and forestry
  - in Asia-Pacific
    - in Australia 347, 349–52, 357
    - biodiversity protection regimes  
351–2
    - challenges 356–8
    - in China 352–4, 357
    - forestry management  
developments 347–8
    - forests, global proportion of  
344–6
    - illegal timber controls 349
    - in India 649–51
    - in Indonesia 348–8, 354–6
    - land use change trends 346–7
    - plantation contributions 345–6
    - reforestation initiatives 353–4
    - socio-economic and industrial-  
political policies 344
  - in Brazil 605–15
  - in EU
    - accounting challenges 305
    - agricultural emissions regulation  
313–16
    - climate policy exclusions and  
inclusions 314–15, 318
    - CORINAIR emissions reporting  
system 309–10
    - effort-sharing and cross-  
compliance regime 313–14
    - emissions contributions 304–5
    - EU ETS inclusions and exclusions  
314–15
    - forest biomass and carbon stock  
304–5
- forestry and land use change-  
related emissions and  
removals regulation 314–18
- net-net accounting 316–17
- reference level principle 316–17
- forestry and land use change-  
related emissions and removals  
(LULUCF)
  - accounting challenges 305
  - afforestation, reforestation and  
deforestation 312
  - biofuels initiatives, overlaps and  
conflicts 338–40
  - contributions to EU emissions  
304–5
  - energy generation, overlaps and  
conflicts 340–42
  - estimation mechanisms 304,  
307–9
  - EU forest biomass and carbon  
stock 304–5
  - EU regulation 314–18
  - extreme natural events provisions  
317–18
  - harvested woods discounts 317
  - Initiative for Sustainable Forest  
Landscapes 323–4
  - international regulatory  
mechanisms 305–6
  - IPCC inventory guidelines 309–10
  - LULUCF principles 321–2
  - net-net accounting 316–17
  - reference level principle 316–17
  - regulated activities, definitions  
311–13
  - reporting requirements 308–13
  - satellite imaging role in 347–8
  - soil emissions treatment 307,  
310–11
  - wetland management 312
- generally
  - carbon flux 321–2
  - carbon sinks, benefits of 304–5

- contributions to global GHG 304–5
- food production protection requirement 306
- importance 303
- UN forestry monitoring programs 348
- UNFCCC and Kyoto Protocol regulatory mechanisms 305–8, 318
- livestock and fertilizer use emissions contributions to EU emissions 304
- cropland and grazing land management 315–16
- emissions hotspots 316
- estimation mechanisms 304, 307–8
- EU accounting regime 315–16
- EU effort-sharing policies 313–14
- in US
  - anti-sprawl/smart growth movements 328–9
  - biofuels initiatives, overlaps and conflicts 338–40
  - Bureau of Land Management, Fish and Wildlife Service 336
  - California Global Warming Solutions Act 329, 332–3
  - cap-and-trade programs 332–3
  - carbon storage erosion trends 325–6
  - conservation easements 330–31
  - contributions to global GHG 324–5
  - endangered species protection regimes 334–5
  - energy law, overlaps and conflicts 340–42
  - federal conservation programs 331–2
  - federal environmental protection regimes 334–5
  - federal public land mitigation initiatives 335–7
  - Fish and Wildlife Service 337
  - forest carbon offset programs 332–3
  - Forest Service 336–7
  - habitat conservation plans 335
  - Initiative for Sustainable Forest Landscapes 323–4
  - Inventory of GHG Emissions and Sinks 324
  - land use change trends 325, 327–8
  - land use law challenges 327–30
  - National Forest Management Act 336–7
  - National Park Service 336–7
  - private landowner protection arrangements 330–33
  - private property rights vs. protection conflicts 326–35
  - Regional Greenhouse Gas Initiative (RGGI) 332–3
  - state and local protection regimes 327–30
  - statutory land use frameworks 329
  - tax incentives 331–2
  - transport emission mitigation, overlaps and conflicts 338–40
  - UNFCCC obligations 321–4, 343
  - voluntary legal protection arrangements 330–31
  - wetland conversion trends 325–6
  - wetland protection regimes 329–30, 334
- Asia-Pacific
  - agriculture and forestry
    - Australian land use change policies 347, 349–52, 357
    - biodiversity protection regimes 351–2
    - challenges 356–8
    - Chinese land use change policies 352–4, 357
    - forestry management developments 347–8
    - forests, global proportion of 344–6
    - illegal timber controls 349
    - Indonesian land use change policies 348–8, 354–6
    - land use change trends 346–7
    - plantation contributions 345–6
    - reforestation initiatives 353–4
    - socio-economic and industrial-political policies 344
  - buildings energy efficiency benefits 213
  - cost-benefit analysis 232–7, 241

- economic instruments 217, 222–9
- energy consumption trends 212, 215–17, 222–9
- environmental efficiency systems and guidelines 229–30
- flexibility and adaptability 237–9, 241
- grants and subsidies 223–6, 238
- information programs 217–18, 229–32
- informational deficiencies 233–4
- in Japan 214–15, 218–20, 223–4, 226–7, 229–30, 235–6, 238–9
- labelling and certification schemes 230–32, 235–6
- legal and regulatory instruments 217–22
- loans 226–8, 236, 238
- policy implementation trends 213
- political feasibility and alignment 239–41
- rationale for intervention 232–4, 241
- regulatory frameworks 214–17
- in Singapore 215–16, 219–21, 224–5, 227–8, 231–2, 238–9
- tax incentives 228–9, 236–7
- in Thailand 216–17, 219, 221–2, 225–6, 228–9, 231–2, 234–9
- training programs 232
- carbon trading
  - in Australia 499–500, 504–5
  - Clean Development Mechanism (CDM) 87–9, 151, 153–4, 295
  - cross-jurisdictional linkages 500
  - domestic investment initiatives 499
  - in India 653–6
  - in Japan 501–3
  - market design challenges 499–500
  - in New Zealand 500–501
  - phased approaches 500
  - in South Korea 503
  - Verified Carbon Standard (VCS) 505
  - voluntary schemes 505
- climate change litigation
  - in Australia 583–92
  - causation, interpretation variations 584–9
- ecological sustainable development (ESD principles) cases 585–92
- extra-territorial jurisdiction challenges 592–4
- human rights, influences of 596–7
- human rights-related claims, challenges 598–9
- in India 594–5, 597–9
- inter-generational equity theory 657
- in New Zealand 592–4
- in Philippines 595–7
- public interest, relevance of 585–9, 594–7
- public law cases, challenges of 583–4
- public trust doctrine 657–8
- right to life, interpretation 594–5
- trends 578, 599
- industry
  - Asia-Pacific Partnership on Clean Development and Climate (APP) 291–2
  - Business-As-Usual (BAU) emissions, and 295
  - challenges 290–91
  - contribution to GHG emissions 290
  - fragmentation of agreements, implications 298–9
  - Global Superior Energy Performance partnership (GSEP) 293–4
  - in India 643–5
  - International Partnership for Energy Efficiency Cooperation (IIEP) 293
  - Joint Crediting Mechanism (JCM) 294–6
  - partial agreements role 291–9
  - technology research role 290–91
  - in Vietnam 296–8
  - renewable/sustainable energy
    - in China 688–9
    - in India 603–4, 641–3, 655–6
  - sustainable development
    - in Japan 536–41
    - project monitoring and evaluation 537

- transport
  - car fuel economy regulations 160–64, 166
  - CDM projects 151, 153–4
  - emissions contribution to GHG 149–50
  - international governance mechanisms 151–4
  - megacities transport policy developments 155–9, 165
  - Nationally Appropriate Mitigation Actions (NAMAs) 154
  - private-public transport modal shift initiatives 155–9, 165
  - vehicle taxation incentives 164–5
- waste management
  - challenges 408, 415–16
  - China 409, 415–21
  - climatic and cultural influences 415–16
  - foreign waste import controls 417
  - hierarchies for 409
  - incineration and waste-to-energy initiatives 413
  - industrial policies, overlap between 419–20
  - informal recycling mechanisms 409, 416
  - market-based instruments 419
  - national emissions diversity trends 408
  - population size, relevance of 407–8
  - recycling 412–14, 417–19
  - regulatory focus 408–9, 412–13
  - Singapore 412–15
  - technical standards 419–21
  - volume trends 415
  - waste production trends 415
  - wastewater management 414–15
- Australia
  - Carbon Pricing Mechanism (CPM) 504
  - carbon tax 54
  - carbon trading 499–500, 504–5
  - climate change litigation 583–92
    - causation, interpretation variations 584–9
    - ecological sustainable development (ESD principles) cases 585–92
    - Kyoto Protocol, ratification 581–2
  - land use change
    - agricultural incentive programs 349–50
    - biodiversity protection regime 351–2
    - challenges 357
    - conservation agreements, independent verification 350–51
    - forestry management developments 347
    - illegal timber controls 349
    - Tasmanian forestry agreements 349–50
    - trends 347
  - aviation industry
    - emissions trading schemes, inclusion in 121–2, 460, 464, 467
    - ‘stop the clock’ proposals 122
  - Bali Action Plan (2007) 10, 515
  - biofuels
    - in EU
      - energy policy 43, 49–50, 112
      - transport policy 108–9, 112–13, 124
    - in US
      - agricultural and forestry policies, overlaps and conflicts 338–40
      - agricultural assistance programs 142–4
      - ethanol, environmental damage from 142, 338–9
      - tax credits 144–5
      - transport policy 140–42
  - biomass
    - in US
      - lifecycle carbon accounting 342
      - local air impacts 342
      - mitigation policy overlap and conflicts 340–42
  - Bonn Declaration (2001) 525–6, 529–30
  - Brazil
    - agriculture and forestry Amazon Fund 607
    - credits and incentives 607–8

- deforestation controls 605–8, 615
- deforestation trends 607–9
- Low Carbon Agriculture Plan 607
- objectives and options 605–6
- REDD regime 607
- voluntary agreements 608
- climate change policy, generally
  - advisory bodies 613–14
  - carbon pricing 607
  - carbon taxes 610–12
  - Forum on Climate Change 614
  - global emissions contribution ranking 609, 616
  - governance challenges 612–15
  - Interministerial Committee for Climate Change (CIM) 613–14
  - mitigation costs 610–12
  - tax and credit incentives 607
  - voluntary reduction targets 604–5
- energy generation
  - consumption trends 609
  - oil reserves exploitation 609–10
  - R&D role 610
  - renewable energy policy objectives 606
  - renewable energy policy objectives and options 606
  - renewable energy trends 609
  - sustainable building 609
- industry 606
- National Fund on Climate Change 607
- National Plan on Climate Change (NPC) 604
- National Policy on Climate Change (PNMC)
  - background 604
  - emission reduction targets 605
  - objectives and optional actions 604–6, 615
  - successes and limitations 606, 613–15
- transport emissions contribution to GHG 159
- buildings energy efficiency
  - in Asia-Pacific
    - benefits 212
    - cost-benefit analysis 232–7, 241
    - economic instruments 217, 222–9
    - energy consumption trends 222–9, 515–217
    - environmental efficiency systems and guidelines 229–30
    - flexibility and adaptability 237–9, 241
    - grants and subsidies 223–6, 238
    - in India 646–8
    - information programs 217–18, 229–32
    - informational deficiencies 233–4
    - in Japan 214–15, 218–20, 223–4, 226–7, 229–30, 235–6, 238–9
    - labelling and certification schemes 230–32, 235–6
    - legal and regulatory instruments 217–22
    - loans 226–8, 236, 238
    - policy implementation trends 213
    - political feasibility and alignment 239–41
    - rationale for intervention 232–4, 241
    - regulatory frameworks 214–17
    - in Singapore 215–16, 219–21, 224–5, 227–8, 231–2, 238–9
    - tax incentives 228–9, 236–7
    - in Thailand 216–17, 219, 221–2, 225–6, 228–9, 231–2, 234–9
    - training programs 232
  - in EU 35–41, 38–9
    - accompanying policies 245
    - Action Plans 37, 40
    - BRE Environmental Assessment Method (BREEAM) 183
    - certification systems 183–5
    - challenges 188–9
    - emissions contributions to GHG 169
    - emissions controls 170
    - energy consumption reductions 170
    - energy efficiency vs. energy saving 179
    - Energy Performance Certificates 170, 174–5
    - energy performance legislation 171–4
    - energy performance of buildings 38–9

- function 245
- green leases 184–8
- labelling and certification 38
- landlord–tenant dilemma 184–8
- low carbon fuels and renewal
  - energy increases 170
- nearly zero energy buildings (NZEB) 174–5, 178
- non-compliance penalties 175
- performance assessments and requirements 170, 174
- policy implementation progress and challenges 175–9
- public procurement requirements 180
- regulatory framework 170–80
- renewable energy initiatives 171–4
- renovation, financial incentives 180–82
- renovation, policies and targets 39–41, 179–80
- secondary legislation 37–8
- soft law developments 169–70, 182–8
- generally
  - cost-effectiveness, importance of 212–13, 232–5
  - global energy consumption trends 212
  - lifetime costs 213, 234
  - motivations for 212–13
- in South Africa 719–20
- in US
  - ACEEE scorecards 204–5
  - Better Buildings Neighbourhood Program 201
  - Building Energy Codes Program (BECF) 194–5
  - California incentive schemes 206–7
  - Clean Air Act influences 191–2, 209–11
  - energy consumption trends 190
  - Energy Efficient Mortgages (EEMs) 203
  - Federal Housing Association
    - loans 203
  - federal regulatory powers 190–93
  - federal taxes and subsidies 200–204, 210–11
  - federally-owned buildings, standards for 199
  - Green Globes system 198–9
  - green leases 186
  - industry standards 195–7
  - Leadership in Energy and Environmental Design (LEED) standard 198
  - legislative challenges 192–3
  - local and city building codes 200
  - non-compliance penalties 192
  - Ohio incentive schemes 207–8
  - Oklahoma incentive schemes 208–9
  - pollution control regime
    - influences 191–2, 209–11
  - private green building standards 198–9
  - Qualified Energy Conservation Bonds (QECBs) 203–4
  - state building codes 194–7
  - State Energy Program (SEP) 201–2
  - state regulatory powers 193–4
  - subsidies and tax incentives 192, 204–9
  - technical assistance programs 200
  - Weatherization Assistance Program (WAP) 201
- C40 initiative 26
- Canada
  - green leases 186
  - Kyoto Protocol, withdrawal from 3, 25
  - vehicle emissions contribution to GHG 159
- Cancun Agreement (2010) 10–11, 15, 19
- carbon pricing controls 21–2
- carbon taxes
  - in Australia 54
  - in Brazil 610–12
  - in EU 119–20, 257
  - in South Africa 713–16
  - in US 54–5
- carbon trading
  - in Asia-Pacific
    - in Australia 499–500, 504–5
    - in China 88–100

- Clean Development Mechanism (CDM) 87–9, 151, 153–4, 295
- cross-jurisdictional linkages 500
- domestic investment initiatives 499
- in India 653–6
- in Indonesia 505
- in Japan 501–3
- market design challenges 499–500
- in New Zealand 500–501
- phased approaches 500
- in South Korea 503
- in Thailand 505
- Verified Carbon Standard (VCS) 505
- voluntary schemes 505
- Clean Development Mechanism (CDM)
  - additionality 434–6
  - in Asia-Pacific 87–9, 151, 153–4, 295
  - baselines and standardization 434–6
  - challenges 531–4
  - climate finance role 530–32
  - differentiation in 19
  - economic efficiency, and 437
  - eligibility criteria 431
  - establishment 9, 431
  - governance structure 431–2
  - Joint Crediting Mechanism, and 295
  - legal position 432
  - negative impacts 436
  - principles 431, 434
  - private sector role 432–3
  - project validation and verification 432, 436
  - prospects 447–8
  - risks and challenges 433–6
  - sustainable development trends 436–7
- framework for various approaches (FVA) 444, 448–9
- generally
  - allowance allocation approaches 455
  - cap and trade approach 46–7
  - challenges 453
  - compliance approaches 455
  - criticism of 453
  - objectives 453
  - participation, mandatory vs. voluntary 454
  - system design features 453–5
  - target approaches, absolute vs. relative 454
  - upstream vs. downstream systems 454
- International Emissions Trading (IET)
  - background 426–7
  - challenges 429–30
  - eligibility criteria 427
  - Green Investment Scheme 429–30
  - hot air, implications of 429–30
  - limitations 428–9
  - mandatory reporting requirements 429
  - prospects 446–7
  - purpose 428
  - success, analysis of 430–31
  - trading restrictions 427–8
- Joint Implementation
  - Accredited Independent Entities (AIEs) 438
  - challenges and consequences 439–40
  - eligibility criteria 438
  - establishment 9, 437–8
  - Marrakesh Agreement reforms 441
  - principles 439
  - prospects 448
  - Track 1 procedures 438–9
  - Track 2 procedures 438–9
- Kyoto flexibility mechanisms, generally 9, 425–6
  - challenges 426, 449–50
  - climate finance role 530–32
  - credits, demand trends 530–31
  - development 9, 22, 425–6
  - importance 449–50
  - progress and project trends 445–6
  - purpose 21–2
  - nationally appropriate mitigation actions (NAMAs) 442–3
  - new market-based mechanism (NMM) 441–6, 448
  - objectives 441–2
  - sectoral crediting approach 442–3

- in US
  - best system of emission reduction (BER) 492–3
  - California Global Warming Solutions Act (AB32) 484–8
  - California Scoping Plan 485
  - cap and trade initiatives 480–88
  - Chicago Climate Exchange 497–8
  - Clean Air Act regulatory regime 488–95, 498
  - Clean Power Plan, and 493–4
  - compliance challenges 477
  - Conservation Fund programs 497
  - emissions allowance auctions 480–81
  - emissions reductions from 481
  - features of 476–7, 498
  - federal policy development
    - attempts 476, 478–9, 498
  - legal challenges 487–90
  - Lieberman-Warner Bill 478–9
  - Midwestern Greenhouse Gas Reduction Accord 482
  - Nature Conservancy 496–7
  - new source performance standards (NSPS) 491–2
  - Regional Greenhouse Gas Initiative (RGGI) 480–81
  - state and regional influences 476–7
  - state and regional initiatives 480–84
  - Verified Carbon Standard (VCS) 496
  - voluntary carbon offsets 477, 495–8
  - Waxman-Markey Bill 478
  - Western Climate Initiative 482–4
  - see also* EU Emissions Trading System
- China
  - agriculture and land use change
    - challenges 357
    - direct investment trends 353–4
    - economic incentives 353
    - emissions standards 353
    - environmental protection regime 352–3
    - polluter pays principle 353
    - reforestation initiatives 353–4
  - buildings energy efficiency
    - building energy codes 692–5
    - development trends 691
    - economic incentives 698–700
    - energy efficiency labelling schemes 695–6
    - energy efficiency performance trends 699, 701
    - energy saving targets 692
    - green buildings labelling and evaluation schemes 696–8
    - inspection and supervision systems 692, 694–5
    - voluntary instruments 695–8
  - carbon trading
    - allowance allocation mechanisms 97
    - allowances, status of 97–8
    - challenges 88
    - compliance and enforcement 98–9
    - criticisms 91
    - domestic pilot scheme 90–92
    - emissions cap setting 95–6
    - framework 90–92
    - inclusion criteria 95
    - intermediaries' role 99
    - pricing controls 96
    - regional *vs.* centralized control conflicts 92–3
    - regulatory authority for 94
    - scheme developments 88–90
    - success forecasts 99–100
    - top down *vs.* bottom up approaches 93
    - Voluntary Measures 90
  - Clean Development Mechanism 87–9
  - climate change policy, generally
    - 11th Five Year Plan achievements 673–4
    - 11th Five Year Plan policies and actions 671–3
    - 12th Five Year Plan policies and targets 674–80
    - air pollution 661–2
    - approaches, scope of 94–5
    - carbon and fuel tax impact forecasts 677–8
    - challenges 86–7, 663, 676–7, 702–4
    - co-benefits 677–8



- command-and-control measures 702
- contributions to GHG emissions 660–61
- demographic change challenges 665–7
- economic policy decoupling, benefits of 703
- emissions reduction forecasts 701–2
- emissions reduction targets 89, 662, 676, 702–3
- energy intensity and economic development patterns 667–70
- environmental pollution impacts on 661–2
- green growth blueprint 660–61
- importance of 660–61
- international policy role 86, 663
- low carbon economy targets 670–71, 703–4
- mandatory standards 662–3
- motivations for 661–2
- policy vs. financial gap 679–80
- poverty reduction policy conflicts 86–7, 664–7
- regional disparity influences 667–70
- Target Responsibility System 673–4
- UNFCCC ratification 87
- urbanization challenges 665–6
- climate finance
  - energy efficiency initiative funding 679–80
  - renewable energy 688
- energy generation
  - challenges 691
  - emission pollutant control trends 691
  - emissions mitigation challenges 687
  - energy efficiency and energy saving trends 690–91
  - energy efficiency initiative funding 679–80
  - energy intensity and economic development patterns 667–70, 680–82
  - generating capacity trends 686–7
  - low carbon economy targets 670–71
  - power rationing 702
  - renewable energy challenges 688–9
  - renewable energy financing 688
  - renewable energy policy developments 688–9
  - renewable energy sustainability performance ranking 603–4
  - solar energy initiatives 689
  - wind power generation developments 688–9
- industry
  - development, environmental challenges 680–81
  - economic structure adjustment 683–6
  - energy consumption trends 680–82
  - energy intensity trends 681–2
  - energy saving targets 682–3
  - green growth proposals for 685–6
  - high-intensity industry, limitations on 686
  - high-tech industry expansion plans 685
  - phasing out obsolete production capacity plans 686
  - Top-10,000 Program 682–4
- sustainable development challenges 86–7
- transport
  - CDM transportation projects 153, 165
  - contribution of vehicle emissions to GHG 159–60
  - emissions contribution to GHG 149–50
  - fuel economy regulations 162–3, 166
  - public-private transport modal shift initiatives 155–9, 165
  - vehicle taxation incentives 164–5
- waste management
  - challenges 415–16
  - climatic and cultural influences 415–16
  - foreign waste import controls 417
  - industrial policies, overlap between 419–20

- informal recycling mechanisms 409, 416
- market-based instruments 419
- recycling policy development 417–19
- regulatory regime 416–17
- technical standards 419–21
- volume trends 415
- Clean Development Mechanism (CDM)
  - additionality 434–6
  - in Asia-Pacific 87–9, 151, 153–4, 295, 654–5
  - baselines and standardization 434–6
  - challenges 531–4
  - climate finance role 530–32
  - differentiation in 19
  - economic efficiency, and 437
  - eligibility criteria 431
  - establishment 9, 431
  - governance structure 431–2
  - Joint Crediting Mechanism, and 295
  - legal position 432
  - negative impacts 436
  - principles 431, 434
  - private sector role 432–3
  - project validation and verification 432, 436
  - prospects 447–8
  - risks and challenges 433–6
  - sustainable development trends 436–7
  - transportation projects, in 151, 153–4
- climate change, generally
  - economic recovery, and 260–62
  - GHG emissions forecasts 2
  - GHG planetary boundaries 2
  - GHG reductions and targets gap 1–2
  - policy ineffectiveness, attitudes to 2–3
  - policy linkage implications 12–13
- climate change law, generally
  - compliance monitoring challenges 22–3
  - criticism 6
  - cross-disciplinary links and conflicts 4, 6–7, 12–13
  - definitions 4–5
  - development 5–6
  - international governance
    - interactions, and 4, 6–7
  - legal nature, evolution of 7–8
  - methodological challenges 7
  - national law conflicts 6–7
  - trends
    - commitment softening 14–17
    - differentiation, changing attitudes to 17–20
    - institutional fragmentation 12–14
    - litigation 23–6
    - policy instruments innovation 20–23
    - soft law vs. hard law debate 16–17
    - top-down vs. bottom-up approaches 14–15
    - transnational and non-state actor role 7–8, 26–9
    - uneven policy focus, implications of 20–21
    - see also* climate change litigation; UNFCCC
- climate change litigation
  - in Asia-Pacific
    - in Australia 583–92
    - causation, interpretation variations 584–9
    - ecological sustainable development (ESD principles) cases 585–92
    - extra-territorial jurisdiction challenges 592–4
    - human rights, influences of 596–7
    - human rights-related claims, challenges 598–9
    - in India 594–5, 597–9, 656–8
    - inter-generational equity theory 657
    - in New Zealand 592–4
    - in Philippines 595–7
    - public interest, relevance of 585–9, 594–7, 656–7
    - public law cases, challenges of 583–4
    - public trust doctrine 657–8
    - right to life, interpretation 594–5, 656–7
    - trends 578, 599
  - in EU
    - challenges and limitations 557–9

- constitutional law influences 543, 550–52, 556–9
- ETS cases, court power interpretations 555–6
- ETS cases, preliminary rulings 548–9, 557–8
- ETS cases, regulatory competence rulings 549–52, 556
- ETS cases, regulatory review power rulings 553–4
- legal certainty, and 553–4
- subsidiarity principle, and 544, 552, 555–7
- trends 25, 557–8
- generally
  - causation, interpretation variations 584–92
  - definitions 545–6, 579–80
  - indirect effects 582
  - inter-generational equity theory 657
  - interpretation, narrative variations 546–7
  - judicial review 579–80
  - legal culture influences 543
  - long-term implications 25–6
  - motives for 546
  - public trust doctrine 657–8
  - purpose 580–82
  - tort law claims, challenges 580
  - trends 23–6
- in South Africa 716–18
- in US
  - administrative law cases 560, 562, 571–6
  - California Global Warming Solutions Act challenge 570–71
  - Clean Air Act cases 562–5
  - climate disclosures cases 565–7
  - Coalition for Responsible Regulation* ruling 564–5
  - common law cases 560, 571–6
  - conflicts and difficulties 574–6
  - Endangered Species Act cases 567–9
  - green building cases 571
  - injunctive relief cases 572–5
  - liability insurance claims 575
  - local program challenges 571
  - Massachusetts* endangerment ruling 57–9, 273, 284, 488–90, 562–5
  - mobile source and motor vehicle emissions cases 563
  - National Environmental Policy Act cases 565–7
  - Our Children's Trust cases 576
  - PSD tailoring rule cases 563–5
  - public nuisance claims 560, 572–6
  - Regional Greenhouse Gas Initiative challenge 569–70
  - state program challenges 570–71
  - stationary source emissions cases 563–5
  - trends 24–5, 560
  - UARG* ruling 565
- climate finance
  - in Asia-Pacific
    - in China 679–80, 688
  - in EU
    - budget mainstreaming 520
    - challenges 509, 520, 524–5, 528
    - Climate Change Windows 528
    - command-and-control measures 519–20
    - consumer incentives and subsidies 519
    - consumption behaviour change initiatives 519
    - domestic climate finance policy developments 511–24
    - domestic climate finance regulatory framework 512–18, 533
    - Emissions Trading System, and 521–4
    - European Climate Change Programme (ECCP) influences 514
    - Fast Start Finance (FSF) commitments 525–30
    - feed-in tariffs 519
    - Global Climate Change Alliance (GCCA) 528
    - global investment gap 524–5
    - international climate finance 524–32
    - international climate pledges 524–30

- Kyoto Protocol, influences of
  - 513–15, 530–32
  - in non-ETS sectors 518–20
  - private sources, importance of 529
  - tax incentives 519
  - transparency 527–9
  - voluntary agreements 513, 518–19
- generally
  - Bonn Declaration (2001) 525–6, 529–30
  - Climate Investment Funds 526–7
  - climate-specific vs. climate-relevant finance 510
  - definition 510
  - global agreement, need for 533–4
  - Green Climate Fund 10, 526
  - multi-actor environments, and 510–11
  - policy development 509–10
  - poverty reduction, and 535
  - Official Development Assistance (ODA) 530
  - in Japan 536–40
  - Climate Investment Funds 526
  - common but differentiated responsibilities
    - changing attitudes to 17–20
    - principle 17–18
  - Convention on Biological Diversity 13
  - Copenhagen COP (2009) 10, 515, 529
  - corporate social responsibility 184
  - Council for Environmental Quality (CEQ) 565–7
- developing countries
  - changing attitudes to 17–20
  - common but differentiated responsibilities 17–20
  - EU climate finance pledges 252–6
  - special situations under UNFCCC 18–19
- Doha COP (2012) 528
- Durban COP (2011) 11, 306–7
- emissions trading *see* carbon trading;
  - EU Emissions Trading System
- energy generation
  - in Asia-Pacific
    - in China 603–4, 667–71, 679–82, 686–72, 690–91, 702
    - in India 603–4, 641–3
  - in Brazil 606, 609–10
  - in EU
    - 20-20-20 targets 34–5, 37, 49, 515
    - biofuels 43, 49–50, 112
    - cogeneration initiatives 49
    - competition vs. environmental protection conflicts 34
    - emissions reduction targets 47
    - emissions trading scheme 46–8
    - energy intensity and GDP 260–61
    - energy saving and efficiency 35–41, 180
    - historical importance 33
    - market liberalization 263
    - policy objectives 33–5
    - renewable/sustainable energy 34–5, 41–6, 48–50
    - security of supply 33
    - soft vs. hard targets 49–50
    - transport policy, implications for 36–7
  - generally
    - energy intensity trends 671
    - global contributions to GHG emissions 289
    - measures, types of 51–2
    - policy developments 671–3
  - in South Africa 603–4, 711–16, 718–19, 721
  - in US
    - Advanced Research Projects Agency – Energy (ARPA-E) 84–5
    - agriculture and forestry mitigation
      - policies, overlaps and conflicts 340–42
    - alternative energy source
      - incentives 71–4
    - American Clean Energy and Security Act (Waxman-Markey) 52–4
    - best available control technology (BACT) requirement 58
    - biomass use 340–42
    - cap-and-trade schemes 52–4, 69–70
    - carbon tax proposals 54–5

- Clean Air Interstate Rule (CAIR) 67–8
- clean energy standards 55–6, 72
- Clean Power Plan 64
- Climate Action Plan 52, 78
- community choice aggregation (CCA) 73–4
- Cross-State Air Pollution Rule (CSAPR) 67–8
- decoupling practices 81–2
- demand response practices 83–4
- demand-side incentives 80–84
- Demand Side Management (DSM) programs 75–7
- dynamic pricing initiatives 81, 83
- energy efficiency and conservation measures 71–82
- energy efficiency standards 77–8
- energy R&D programs 84–5
- EPA Regulations 56–64
- federal scheme developments 52–4
- federal tax incentives 74
- feed-in tariffs (FIT) 73
- greenhouse gas mitigation 51–85, [chapter 3]
- Hazardous Air Pollutants (HAP) regulation 65–6
- indirect regulatory mechanisms 65–8
- integrated resource planning (IRP) requirements 79–80
- interruptible load agreements 83–4
- Investment Tax Credit (ITC) 74
- Mandatory Reporting Rules (MRR) 59–60
- Massachusetts* endangerment ruling 57–9, 273, 284, 488–90
- Mercury and Air Toxics Standards (MATS) 65–7
- National Ambient Air Quality Standards (NAAQS) 56–8
- net metering 72–3
- new source performance standards (NSPS) 61–4, 491–2
- Prevention of Significant Deterioration (PSD tailoring rules) 58–9, 489–90
- Production Tax Credit (PTC) 74
- Public Utility Regulatory Policies Act (PURPA) requirements 75–7
- Regional Greenhouse Gas Initiative (RGGI) 52, 69–70
- Renewable Energy Standards (RES) 72, 341–2
- renewable portfolio standards (RPS) 72, 341–2
- Smart Grids 82–3
- smart meters 82–4
- State and regional initiatives 52–3, 68–71, 341–2
- State Public Utility Commission policies 79–82
- Timing and Tailoring Rules 60–61  
*see also* renewable/sustainable energy
- EU Emissions Trading System generally
  - agricultural and land use change emissions inclusion in 314–15
  - allowances allocation mechanisms 457–8, 462, 465–6
  - auctioning of emissions 462–6, 469–70, 523–4
  - aviation inclusion in 121–2, 460, 464, 467
  - background 248–9, 451
  - backloading 469–72
  - benchmarks, role of 465
  - Carbon Market Report proposals 470
  - centralized approach 93
  - challenges 249, 252–3, 451–2, 460, 467, 471–3
  - climate and energy policy, place in 249–50, 461–3, 465
  - climate finance policies, and 521–4
  - cost-effectiveness analysis 521
  - decentralized approach 456–7
  - design flaws 252–3
  - design stage 456–60
  - direct intervention approach 246
  - economic and sovereign debt crisis influences on 250–52, 269
  - electricity installations *vs.* industrial installations 462, 465
  - emissions allocation mechanisms 47–8

- emissions reduction targets 467–8, 472, 516–17
- energy efficiency policy, and 468–9
- EU-wide cap 465, 516, 521
- financial crisis influence on 467, 473
- focus, shift in 246
- governance developments 452
- harmonization, role of 455–6
- implementation 459–60
- Kyoto Protocol flexibility
  - mechanisms, links with 458–9, 462, 466
- linear reductions 253–4
- low prices, causes and implications 521–3
- Member State policy blocking 473–4
- National Allocation Plans (NAPs) 457
- opt-out mechanisms 457–8
  - pilot stage 459–60
- political influences 273–474
- principles of 46–7
- prospects 273–5, 516–17
- purpose 245–6, 249, 269
- reforms 253–4, 451–2, 463–73
- review stage 460–63
- scale 451, 516
- set-aside option proposal 468
- subsidiarity principle, and 455–6
- successes 253, 255
- industrial policies, and
  - administrative costs 255–6
  - allowances backloading 251–2
  - border carbon taxes 257
  - carbon price fluctuation influences 251–2
  - CDM and JI credits 254
  - direct and indirect costs 255–6
  - effectiveness in 250–54
  - free allocations and windfall profits 252–3, 255–6
  - impacts on 254–6
  - import protection 257
  - non-EU competition implications 254–6
- European Union
  - agriculture and forestry
    - accounting challenges 305
    - agricultural emissions regulation 313–16
    - climate policy exclusions and inclusions 314–15, 318
    - CORINAIR emissions reporting system 309–10
    - effort-sharing and cross-compliance regime 313–14
    - emissions and removals contributions 304–5
    - emissions contributions 304–5
    - EU ETS inclusions and exclusions 314–15
    - forest biomass and carbon stock 304–5
    - forestry and land use change-related emissions and removals regulation 314–18
    - net-net accounting 316–17
    - reference level principle 316–17
  - buildings energy efficiency 38–9
    - accompanying policies 245
    - Action Plans 37, 40
    - BRE Environmental Assessment Method (BREEAM) 183
    - certification systems 183–5
    - challenges 188–9
    - emissions contributions to GHG 169
    - emissions controls 170
    - energy consumption reductions 170
    - energy efficiency vs. energy saving 179
    - Energy Performance Certificates 170, 174–5
    - energy performance legislation 171–4
    - function 245
    - green leases 184–8
    - landlord–tenant dilemma 184–8
    - low carbon fuels and renewal energy increases 170
    - nearly zero energy buildings (NZEB) 174–5, 178
    - non-compliance penalties 175
    - performance assessments and requirements 170, 174
    - policy implementation progress and challenges 175–9

- public procurement requirements 180
- regulatory framework 170–80
- renewable energy initiatives 171–4
- renovation, financial incentives 180–82
- renovation, policies and targets 179–80
- secondary legislation 37–8
- soft law developments 169–70, 182–8
- carbon trading *see* EU Emissions Trading System
- climate change litigation
  - challenges and limitations 557–9
  - constitutional law influences 543, 550–52, 556–9
  - ETS cases, court power interpretations 555–6
  - ETS cases, preliminary rulings 548–9, 557–8
  - ETS cases, regulatory competence rulings 549–52, 556
  - ETS cases, regulatory review power rulings 553–4
  - legal certainty, and 553–4
  - subsidiarity principle, and 544, 552, 555–7
  - trends 25, 557–8
- climate change policy, generally
  - developments 511–18
  - long-term objectives 245–6
  - principal elements 249–50
- climate finance
  - budget mainstreaming 520
  - challenges 509, 520, 524–5, 528
  - Climate Change Windows 528
  - command-and-control measures 519–20
  - consumer incentives and subsidies 519
  - consumption behaviour change initiatives 519
  - domestic climate finance policy developments 511–24
  - domestic climate finance regulatory framework 512–18, 533
  - Emissions Trading System, and 521–4
  - European Climate Change Programme (ECCP) influences 514
  - Fast Start Finance (FSF) commitments 525–30
  - feed-in tariffs 519
  - Global Climate Change Alliance (GCCA) 528
  - global investment gap 524–5
  - international climate finance 524–32
  - international pledges 524–30
  - Kyoto Protocol, influences of 513–15, 530–32
  - in non-ETS sectors 518–20
  - private sources, importance of 529
  - tax incentives 519
  - transparency 527–9
  - voluntary agreements 513, 518–19
- energy generation
  - 20-20-20 targets 34–5, 37, 49, 245, 515
  - biofuels 43, 49–50
  - cogeneration initiatives 49
  - competition *vs.* environmental protection conflicts 34
  - emissions reduction targets 47
  - emissions trading scheme 46–8
  - energy saving and efficiency 35–41
  - historical importance 33
  - market liberalization 263
  - objectives 33–5
  - renewable/sustainable energy 34–5, 41–6, 48–50
  - security of supply 33
  - soft *vs.* hard targets 49–50
  - transport policy, implications for 36–7
- energy saving and efficiency 35–41
  - accompanying policies 245
  - Action Plans 37, 40
  - energy performance of buildings 38–9
  - function 245
  - labelling and certification 38
  - secondary legislation 37–8
  - targets and enforcement 39–41

- industry
  - climate and energy policy
    - implications for 249–50, 258–60, 461–3, 465
  - climate change regulation
    - influences 257–60
  - decoupling emissions from
    - economic growth 260–64
  - development 248–9
  - economic and sovereign debt crisis
    - influences on 250–52, 269
  - emissions reduction Roadmap 247–8
  - energy efficiency regulations 258–9
  - energy market liberalization 263–4
  - environmental impact assessments 259–60
  - European Industrial Initiatives (EIIs) 264–5
  - GHG emissions contributions, by industrial sector 247
  - Industrial Renaissance
    - Communication 263–4
  - investment barriers 266–9
  - investment incentives 265–9
  - New Industrial Policy
    - Communication 262
  - objectives 269–70
  - private vehicle emissions reduction
    - targets 258
  - rebound effect 262
  - SET-Plan 262–9
  - technology death risk area 268–9
- renewable/sustainable energy 34–5
  - biofuels 43, 49–50
  - buildings energy efficiency 171–4
  - cogeneration initiatives 49
  - competition impacts 45
  - development trends 42
  - employment opportunities 41
  - energy generation 34–5, 41–6, 48–50
  - integrated policy instruments 48–9
  - national support schemes 44–5
  - policy development 42–3
  - targets 44–6, 50
  - transport 109–11
- transport
  - aviation emissions trading 121–2
  - biofuels, promotion of 108–10, 112–13, 124
  - carbon taxes 119–20
  - challenges 107–8, 123–5
  - development 103–4
  - electric vehicles 112–13, 124
  - emissions reduction targets 104, 110, 113, 117–18
  - energy efficiency policies 36–7, 113–18
  - fuel carbon intensity reduction 108–13
  - fuel economy labelling 114–15
  - hydrogen powered vehicles 112–13
  - indirect land use change impacts 111–13
  - noise and air pollution charges 121
  - policy focus 105–7
  - private vehicles, industry role 113–18
  - public transport vehicles, industry role 116–17
  - renewable energy policies 109–11
  - successes 124
  - sustainable urban transport plans (SUTPs) 123–5
  - transport use influences 119–23
  - unanimity requirement 107
  - urban mobility plans 123–5
  - vehicle efficiency 113–18, 124
  - vehicle taxation 114–15, 118
  - vehicle use pattern changes 122–5
- waste management
  - biodegradable materials 364
  - carbon capture storage, and 371–2
  - hazardous waste incineration 369–70
  - landfill regulatory regime 363–4
  - policy development 361–3
  - Waste Framework Directive 363, 368–9, 372
  - waste incineration *vs.* energy recovery, ECJ rulings 365–8
- see also* EU Emissions Trading System
- financial aid *see* Official Developmental Assistance (ODA)



- Finland
  - renewable energy use targets 44
- forestry *see* agriculture and forestry
- France
  - building energy efficiency
    - certification systems (DGNB) 183–4
  - green leases 187
  - renewable energy use targets 44
  - vehicle emissions contribution to GHG 159
- Germany
  - building energy efficiency
    - certification systems (DGNB) 183–4
  - Fast Start Finance (FSF) pledges 527
  - feed-in tariffs 519
  - vehicle emissions contribution to GHG 159–60
- Greece
  - Kyoto non-compliance case 25
- Green Climate Fund 10, 526
- greenhouse gases, generally
  - fossil fuel electricity generation
    - impacts on 52
  - hydrochlorofluorocarbons (HCFCs) 12
  - hydrofluorocarbons (HFCs) 12–13
- Hague COP (2000) 10
- hydrochlorofluorocarbons (HCFCs) 12
- hydrofluorocarbons (HFCs) 12–13
- India
  - agriculture and forestry
    - deforestation controls 649–50
    - Green India Mission 650–51
  - buildings
    - energy consumption trends 646
    - energy efficiency initiatives 646–7
    - information and labelling
      - initiatives 648
    - sustainable building codes 647
  - carbon trading
    - challenges 655–6
    - global market position 653–5
    - Renewable Energy Certificate (REC) 655–6
  - climate change litigation
    - inter-generational equity theory 657
    - litigation trends, generally 658
    - public interest litigation 594–5, 597–9, 656
    - public trust doctrine 657–8
  - climate change policies, generally
    - climate change vulnerabilities 634
    - co-benefits approach 636–7, 659
    - common but differentiated responsibilities 635
    - contributions to global GHG emissions 149–50, 634–5
    - economic growth, conflicts with 634
    - emissions reduction targets 635
    - emphasis changes 635–6
    - focus 636–7, 659
    - guiding principles 638
    - mitigation initiatives 641–51
    - National Action Plan on Climate Change (NAPCC) 636–51, 659
    - National Missions 639–40, 659
    - State Action Plans on Climate Change (SAPCC) 639–40
    - UNFCCC commitments 634–5, 656
  - climate finance
    - Global Environment Facility (GEF) role 653
    - Partial Risk Guarantee Fund (PRGF) 652
    - private sector mechanisms 652–3
    - sources 651–3
    - trends and targets 651
    - Venture Capital Fund for Energy Efficiency (VCFEE) 652–3
  - economic growth trends 634
  - energy generation
    - contribution to GHG emissions 641
    - GHG mitigation initiatives 641–3
    - renewable energy sustainability performance ranking 603–4
    - renewable energy trends 641–3
    - solar energy initiatives 641–2
  - industry
    - air quality standards 645

- contribution to GHG emissions 643
  - energy efficiency initiatives 644–5
  - financing mechanisms and incentives 645
  - standards and labelling initiatives 644–5
- transport
  - CDM transportation projects 153
  - contribution to GHG emissions 149–50, 159–60, 648
  - emission and fuel standards 648–9
  - National Sustainable Habitat (NMSH) parameters 649
  - public-private transport modal shift initiatives 155–9, 649
- Indonesia
  - climate change mitigation challenges 354
  - climate change policy objectives 354–6
  - forestry management 347–8, 355–6
  - land conversion restrictions 355
  - voluntary carbon trading market proposal 505
- industry
  - in Asia-Pacific
    - Asia-Pacific Partnership on Clean Development and Climate (APP) 291–2
    - Business-As-Usual (BAU) emissions, and 295
    - challenges 290–91
    - in China 680–86
    - contribution to GHG emissions 290
    - fragmentation of agreements, implications 298–9
    - Global Superior Energy Performance partnership (GSEP) 293–4
    - International Partnership for Energy Efficiency Cooperation (IEEP) 293
    - in Japan 294–6
    - Joint Crediting Mechanism (JCM) 294–6
    - partial agreements role 291–9
    - technology research role 290–91
    - in Vietnam 296–8
  - aviation industry
    - emissions trading schemes, inclusion in 121–2
    - ‘stop the clock’ proposals 122
  - in EU
    - climate and energy policy implications for 249–50, 461–3, 465
    - climate change regulation influences 257–60
    - decoupling emissions from economic growth 260–64
    - development 248–9
    - economic and sovereign debt crisis influences on 250–52, 269
    - emissions reduction Roadmap 247–8
    - energy efficiency regulations 258–9
    - energy market liberalization 263–4
    - environmental impact assessments 259–60
    - European Industrial Initiatives (EIIs) 264–5
    - GHG emissions contributions, by industrial sector 247
    - Industrial Renaissance Communication 263–4
    - investment barriers 266–9
    - investment incentives 265–9
    - New Industrial Policy Communication 262
    - objectives 269–70
    - private vehicle emissions reduction targets 258
    - rebound effect 262
    - SET-Plan 262–9
    - technology death risk area 268–9
    - see also* EU Emissions Trading System
  - generally
    - fragmentation of agreements, implications 289–90
    - global contributions to GHG emissions 289
    - partial agreements, role of 288–9
    - private sector role 289–90

- in US
  - Best Available Control Technology (BACT) requirement 277–9, 285–6
  - California Global Warming Solutions Act (AB32) 286
  - cap-and-trade schemes 286
  - Center for Corporate Climate Change 282–3
  - Clean Air Act controls 272–3, 285
  - direct and indirect emissions 271
  - direct regulation 272, 287
  - EPA powers 273
  - federal programs 272–83
  - Green Chill program 283
  - High Global Warming Potential Partnership 283
  - mandatory GHG reporting rules 274–5
  - Massachusetts* endangerment ruling 57–9, 273, 284, 488–90
  - National Ambient Air Quality Standards (NAAQS) 275, 280
  - new source performance standards (NSPS) 280–81, 491–2
  - performance standards for non-GHG pollutants 281–2
  - prevention of significant deterioration (PSD tailoring rules) 275–9, 285–6, 489–90
  - Reasonably Available Control Technology (RACT) 286
  - sector definitions 271
  - SIPs programs 285–6
  - State programs 283–6
  - voluntary programs 282–3
- International Emissions Trading (IET)
  - background 426–7
  - challenges 429–30
  - eligibility criteria 427
  - Green Investment Scheme 429–30
  - hot air, implications of 429–30
  - limitations 428–9
  - mandatory reporting requirements 429
  - prospects 446–7
  - purpose 428
  - success, analysis of 430–31
  - trading restrictions 427–8
- Japan
  - buildings energy efficiency
    - Basic Energy Plan 215
    - building envelope components codes 219–20
    - CCREUB and CCREUH Programs 218–20
    - cost-benefit analysis 235–6
    - economic instruments/financial incentives 223–4, 226–8
    - energy consumption trends 215
    - environmental efficiency
      - assessment systems and guidelines 229–30, 235–6
      - grants and subsidies 223–4
      - information programs 229–30
      - labeling and certification schemes 230, 235–6
    - legal and regulatory instruments 218–20
    - loans 226–7, 236
    - policy flexibility and adaptability 238–9
    - political feasibility and alignment 239–40
    - regulatory framework 214–15
    - Strategic Energy Plan 215
    - tax incentives 228
  - carbon trading 501–3
  - direct investment strategy 502
  - industry
    - Joint Crediting Mechanism (JCM) 294–6
  - sustainable development
    - climate change policy loans 538
    - financial aid trends 536
    - Malaysia, assistance for 539
    - mitigation projects 538–40
    - policy objectives 537–8
    - private sector investment finance 540–41
    - project monitoring and evaluation 537
    - Thailand, assistance for 539
    - Vietnam, assistance for 538–9
  - transport
    - fuel economy regulations 160–62, 166
    - public-private transport modal shift initiatives 155–9, 165

- vehicle emissions contribution to GHG 159–60
  - vehicle taxation incentives 164
- Joint Implementation
  - Accredited Independent Entities (AIEs) 438
  - challenges and consequences 439–40
  - eligibility criteria 438
  - establishment 9, 437–8
  - Marrakesh Agreement reforms 441
  - principles 439
  - prospects 448
  - Track 1 procedures 438–9
  - Track 2 procedures 438–9
- Kyoto Protocol (1997)
  - assistance facilities under 9
  - climate finance, influences on 513–15, 530–32
  - common but differentiated responsibilities 17–18
  - flexibility mechanisms *see* carbon trading
  - land use change (LULUCF)
    - regulatory mechanism 305–8, 318
    - emissions reduction obligations 322–3
    - reporting requirements 310–11, 323–4
  - monitoring, reporting and verification (MRV) systems 3–4
  - non-compliance implications 9, 25
  - policy approaches 15
  - purpose 9–10
  - strengths and limitations 3, 17
  - withdrawals from 3, 10, 323
- land use change *see* agriculture and forestry
- Malaysia
  - Japanese development assistance programs 539
- Millennium Development Goals
  - poverty reduction and sustainable development, overlaps 535
- monitoring, reporting and verification (MRV) systems
  - Cancun Agreements, under 10
  - challenges 15–16
  - commitment attitudes, relevance of 15–16
  - Kyoto Protocol, under 3–4
  - Montreal Protocol (1987) 12, 515
  - nationally appropriate mitigation actions (NAMAs) 442–3
  - new market-based mechanism (NMM) 442–4, 448
  - New Zealand
    - carbon trading 500–501
    - climate change litigation 592–4
  - Official Developmental Assistance (ODA)
    - diversion of 530
    - in Japan
      - Asian assistance programs 538–40
      - private sector investment finance 539–40
      - project monitoring and evaluation 537
      - trends 536
    - ozone depleting substances
      - Montreal Protocol 12
  - Philippines
    - climate change litigation 595–7
  - pollution
    - air pollutant, definition 58
  - poverty reduction
    - climate finance role in 535
    - EU policy 535
    - sustainable development, policy overlap 535–6
  - Reducing Emissions from Deforestation and Forest Degradation (REDD+)
    - criticisms of 355–6
    - database development 348
    - policy development 10–11
  - Regional Greenhouse Gas Initiative (RGGI) 52, 69–70, 332–3, 480–81, 569–70
  - renewable/sustainable energy
    - in Asia-Pacific
      - in China 688–9
      - in India 603–4, 641–3, 655–6

- in Brazil 606, 609
  - in EU 34–5
    - biofuels 43, 49–50
    - buildings energy efficiency 171–4
    - cogeneration initiatives 49
    - competition impacts 45
    - development trends 42
    - employment opportunities 41
    - energy generation 34–5, 41–6, 48–50
    - integrated policy instruments 48–9
    - national support schemes 44–5
    - policy development 42–3
    - targets 44–6, 50
    - transport 109–11
  - in Russia 603–4, 626
  - in South Africa 178–9, 603–4, 711–14
  - in US
    - energy generation 72
    - Renewable Energy Standards (RES) 72, 341–2
    - renewable portfolio standards (RPS) 72, 341–2
    - transport 137–42, 145–6, 148, 338–40
    - waste management 400–401, 404–6
- Russia
- climate change policy, generally
    - domestic policies 622–6
    - economic and energy security drivers for 617
    - economic restructuring influences 619
    - fossil fuel production, global ranking 617–18
    - global GHG contribution trends 617–18
    - global position and role 617–18
    - implementation challenges 617
    - Kyoto Protocol participation 617–22, 632
    - renewable energy sustainability performance ranking 603–4
  - emissions mitigation initiatives
    - associated petroleum gas utilization 624–5
    - carbon funds 620
    - challenges 632–3
  - Climate Doctrine (2009) 623–6
  - domestic emissions trading scheme 630–31
  - emissions reduction targets 617, 619–21, 626
  - energy efficiency and energy saving 624
  - EU effort sharing initiative, and 621–2
  - EU emissions trading participation 618–20
  - Joint Implementation participation 627–30
  - offset credits, demand for 631–2
  - renewable energy 626
- shipping
- efficiency standards 122
  - emissions reduction policies 122
- Singapore
- buildings energy efficiency
    - economic instruments/financial incentives 223–5, 227–8
    - energy consumption trends 215–16
  - Energy Efficiency Improvement Assistance Scheme 224–5
  - energy reduction targets 216
  - grants and subsidies 224–5
  - Green Mark Scheme 220–21, 224–5, 238
  - information programs 231–2
  - labeling and certification schemes 231–2
  - legal and regulatory instruments 218–19
  - loans 227–8
  - policy flexibility and adaptability 238
  - political feasibility and alignment 239–40
  - regulatory framework 215–16
  - training programs 232
- waste management
- incineration and waste-to-energy initiatives 413
  - objectives 414
  - recycling 412–14
  - regulatory focus 412–13
  - wastewater management 414–15

- South Africa
  - Adaptation Research Programme 722
  - buildings energy efficiency 719–20
  - climate change litigation 716–18
  - climate change policy, generally
    - carbon capture and sequestration policies 721–2
    - carbon pricing 714–16
    - carbon taxes 713–16
    - carbon trading 716
    - common but differentiated responsibilities 709
    - constitutional principles 710
    - emissions contributions to GHG 708, 713
    - informed participation 710
    - Integrated Resource Plan (IRP) 711–13, 718
    - inter-generational sustainability 709
    - legislative principles 709–10
    - mitigation opportunities 711
    - mitigation strategy 706–9
    - National GHG Emissions Trajectory Range 708–9
    - objectives 706, 709–10
    - policy proposals 705–6
    - polluter pays principle 710, 716–18, 721
    - precautionary principle, and 710, 721
    - renewable energy initiatives 711–13
    - social responsibilities 711–13
  - energy generation
    - carbon taxes 715–16
    - energy efficiency initiatives 719
    - Integrated Demand Management 719
  - Medium Term Risk Mitigation Plan for Electricity 712–13
  - renewable energy policies and initiatives 711–14, 718–19
  - renewable energy sustainability performance ranking 603–4
  - waste-to-energy policies 721
  - transport
    - energy efficient public transport initiatives 720–21
    - waste management 721
    - water conservation and demand management 721
- South Korea
  - carbon trading initiatives 503
  - CDM transportation projects 153
  - fuel economy regulations 163
  - public-private transport modal shift initiatives 155–9
  - transport emissions contribution to GHG 149–50, 159–60
  - vehicle taxation incentives 165
- Spain
  - transport emissions contribution to GHG 159
- sustainable development
  - in China 86–7
  - generally
    - post-2015 global agenda and partnership 535
    - poverty reduction, policy overlap 535–6
    - principles 535–6
  - in Japan
    - climate change policy loans 538
    - financial aid trends 536
    - Malaysia, assistance for 539
    - mitigation projects 538–40
    - policy objectives 537–8
    - private sector investment finance 540–41
    - project monitoring and evaluation 537
    - Thailand, assistance for 539
    - Vietnam, assistance for 538–9
  - see also* Official Development Assistance (ODA)
- sustainable energy *see* renewable/sustainable energy
- Thailand
  - buildings energy efficiency
    - cost-benefit analysis 234–7
    - economic instruments/financial incentives 223, 225–6, 228–9
  - ENCON Program 217, 219, 222–3, 226
  - energy consumption trends 216–17
  - grants and subsidies 225–6

- information programs 231–2
- labeling and certification schemes 231
- legal and regulatory instruments 219, 221–2
- loans 228
- policy flexibility and adaptability 238–9
- political feasibility and alignment 240
- regulatory framework 216–17
- tax incentives 228–9, 236–7
- training programs 232
- carbon trading 505
- Japanese development assistance programs 539
- transnational climate change policy/governance
  - accountability 28–9
  - developments 26–9
  - legal challenges 28–9
- transport
  - in Asia-Pacific
    - car fuel economy regulations 160–63
    - CDM projects 151, 153–4
    - in China 149–50, 153, 156, 159–60, 162–6
    - emissions contribution to GHG 149–50
    - in India 149–50, 153, 155–60, 648–9
    - international governance mechanisms 151–4
    - in Japan 155–62, 164–6
    - megacities transport policy developments 155–9, 165
    - Nationally Appropriate Mitigation Actions (NAMAs) 154
    - private-public transport modal shift initiatives 155–9
    - in South Korea 149–50, 153, 155–60, 163, 165
    - vehicle taxation incentives 164–5
  - in EU
    - aviation emissions trading 121–2
    - biofuels, promotion of 108–10, 112–13, 124
    - carbon taxes 119–20
    - challenges 107–8, 123–5
    - development 103–4
    - electric vehicles 112–13, 124
    - emissions contribution to GHG 105–8
    - emissions reduction targets 104, 110, 113, 117–18
    - energy efficiency policies 36–7, 113–18
    - fuel carbon intensity reduction 108–13
    - fuel economy labelling 114–15
    - hydrogen powered vehicles 112–13
    - indirect land use change impacts 111–13
    - noise and air pollution charges 121
    - policy focus 105–7
    - private vehicles, industry role 113–18
    - public transport vehicles, industry role 116–17
    - renewable energy policies 109–11
    - successes 124
    - sustainable urban transport plans (SUTPs) 123–5
    - transport use influences 119–23
    - unanimity requirement 107
    - urban mobility plans 123–5
    - vehicle efficiency 113–18, 124
    - vehicle taxation 114–15, 118
    - vehicle use pattern changes 122–5
- generally
  - global emissions contribution to GHG 289
- in South Africa 720–21
- in US
  - 21st Century Truck Partnership 138
  - agriculture and forestry mitigation policies, overlaps and conflicts 338–40
  - alternative fuels, economic incentives 129, 142–5
  - ARPA-E role 138–9
  - biofuels 140–45, 338–40
  - California State initiatives 146–8
  - cap-and-trade programs 147–8
  - Corporate Average Fuel Economy (CAFE) standards 127–31

- electric and hybrid vehicles, tax credits 145–6
- emissions contribution to GHG 126, 159–60, 338
- energy efficiency incentives 136–9
- Energy Policy and Conservation Act role 127–9
- footprint method 130–31
- fuel economy standards, credit systems 132–3
- fuel economy standards, development 127–31
- fuel economy standards, violation penalties 129, 133–4
- ‘Gas Guzzler Tax’ 137
- Heavy Duty National Program 134–5
- Hydrogen and Fuel Cell Technology Program 138
- limitations 135–6
- Low Carbon Fuel Standard 147
- National Highway Traffic Safety Administration (NHTSA) role 128, 130
- National Program 127, 131–6, 148
- nitrous oxide and methane emissions caps 132
- reduction targets 148
- renewable fuel, consumer incentives 145–6
- renewable fuel, economic incentives 137–9
- Renewable Fuel Standard program 139–42, 148, 338–40
- tax credits 144–6
- US Drive program 138
- vehicle conversion tax credits 145–6
- vehicle emissions contribution to GHG 126, 159–60, 338
- vehicle technology incentives 137–9
- US emissions contribution to GHG 126, 159–60, 338
- UN Conference on Environment and Development (Rio, 1992) 8
- UNFCCC
  - agriculture and forestry mitigation requirements 305–8, 321–4, 343
  - Cancun Agreement (2010) 10–11, 15, 19
  - coordination role 14
  - Copenhagen COP (2009) 10, 515, 529
  - criticisms 3, 9
  - Doha COP (2012) 528
  - Durban COP (2011) 11, 306–7
  - Hague COP (2000) 10
  - limitations 9, 150
  - objectives 8–9
  - ratification 9
  - see also* carbon trading; Kyoto Protocol
- United Kingdom
  - BRE Environmental Assessment Method (BREEAM) 183
  - Fast Start Finance (FSF) pledges 527
  - green leases 186–7
- United States
  - agriculture and forestry
    - anti-sprawl/smart growth movements 328–9
  - biofuels initiatives, overlaps and conflicts 338–40
  - Bureau of Land Management, Fish and Wildlife Service 336
  - California Global Warming Solutions Act 329, 332–3
  - cap-and-trade programs 332–3
  - carbon storage erosion trends 325–6
  - conservation easements 330–31
  - contributions to global GHG 324–5
  - endangered species protection regimes 334–5
  - energy law, overlaps and conflicts 340–42
  - federal conservation programs 331–2
  - federal environmental protection regimes 334–5
  - federal public land mitigation initiatives 335–7
  - Fish and Wildlife Service 337
  - forest carbon offset programs 332–3
  - Forest Service 336–7



- habitat conservation plans 335
- Initiative for Sustainable Forest Landscapes 323–4
- Inventory of GHG Emissions and Sinks 324
- land use change trends 325, 327–8
- land use law challenges 327–30
- National Forest Management Act 336–7
- National Park Service 336–7
- private landowner protection arrangements 330–33
- private property rights vs. protection conflicts 326–35
- Regional Greenhouse Gas Initiative (RGGI) 332–3
- state and local protection regimes 327–30
- statutory land use frameworks 329
- tax incentives 331–2
- transport emission mitigation, overlaps and conflicts 338–40
- UNFCCC obligations 321–4, 343
- voluntary legal protection arrangements 330–31
- wetland conversion trends 325–6
- wetland protection regimes 329–30, 334
- buildings energy efficiency
  - ACEEE scorecards 204–5
  - Better Buildings Neighbourhood Program 201
  - Building Energy Codes Program (BECP) 194–5
  - California incentive schemes 206–7
  - Clean Air Act influences 191–2, 209–11
  - energy consumption trends 190
  - Energy Efficient Mortgages (EEMs) 203
  - Federal Housing Association loans 203
  - federal regulatory powers 190–93
  - federal taxes and subsidies 200–204, 210–11
  - federally-owned buildings, standards for 199
  - Green Globes system 198–9
  - green leases 186
  - industry standards 195–7
  - Leadership in Energy and Environmental Design (LEED) standard 198
  - legislative challenges 192–3
  - local and city building codes 200
  - non-compliance penalties 192
  - Ohio incentive schemes 207–8
  - Oklahoma incentive schemes 208–9
  - pollution control regime influences 191–2, 209–11
  - private green building standards 198–9
  - Qualified Energy Conservation Bonds (QECBs) 203–4
  - state building codes 194–7
  - State Energy Program (SEP) 201–2
  - state regulatory powers 193–4
  - subsidies and tax incentives 192, 204–9
  - technical assistance programs 200
  - Weatherization Assistance Program (WAP) 201
- carbon trading
  - best system of emission reduction (BER) 492–3
  - California Global Warming Solutions Act (AB32) 484–8
  - California Scoping Plan 485
  - cap and trade initiatives 480–88
  - Chicago Climate Exchange 497–8
  - Clean Air Act regulatory regime 488–95, 498
  - Clean Power Plan, and 493–4
  - compliance challenges 477
  - Conservation Fund programs 497
  - emissions allowance auctions 480–81
  - emissions reductions from 481
  - features of 476–7, 498
  - federal policy development attempts 476, 478–9, 498
  - legal challenges 487–90
  - Lieberman-Warner Bill 478–9
  - Midwestern Greenhouse Gas Reduction Accord 482
  - Nature Conservancy 496–7

- new source performance standards (NSPS) 491–2
- Regional Greenhouse Gas Initiative (RGGI) 480–81
- state and regional influences 476–7
- state and regional initiatives 480–84
- Verified Carbon Standard (VCS) 496
- voluntary carbon offsets 477, 495–8
- Waxman-Markey Bill 478
- Western Climate Initiative 482–4
- climate change litigation
  - administrative law cases 560, 562, 571–6
  - California Global Warming Solutions Act challenge 570–71
  - Clean Air Act cases 562–5
  - climate disclosures cases 565–7
  - Coalition for Responsible Regulation* ruling 564–5
  - common law cases 560, 571–6
  - conflicts and difficulties 574–6
  - Endangered Species Act cases 567–9
  - green building cases 571
  - injunctive relief cases 572–5
  - liability insurance claims 575
  - local program challenges 571
  - Massachusetts* endangerment ruling 57–9, 273, 284, 488–90, 562–5
  - mobile source and motor vehicle emissions cases 563
  - National Environmental Policy Act cases 565–7
  - Our Children’s Trust cases 576
  - PSD tailoring rule cases 563–5
  - public nuisance claims 560, 572–6
  - Regional Greenhouse Gas Initiative challenge 569–70
  - state program challenges 570–71
  - stationary source emissions cases 563–5
  - trends 24–5, 560
  - UARG* ruling 565
- energy generation
  - Advanced Research Projects Agency – Energy (ARPA-E) 84–5
  - agriculture and forestry policies, overlaps and conflicts 340–42
  - alternative energy source incentives 71–4
  - American Clean Energy and Security Act (Waxman-Markey) 52–4
  - best available control technology (BACT) requirement 58
  - biomass use 340–42
  - cap-and-trade schemes 52–4, 69–70
  - carbon tax proposals 54–5
  - Clean Air Interstate Rule (CAIR) 67–8
  - clean energy standards 55–6, 72
  - Clean Power Plan 64, 493
  - Climate Action Plan 52, 78
  - community choice aggregation (CCA) 73–4
  - Cross-State Air Pollution Rule (CSAPR) 67–8
  - decoupling practices 81–2
  - demand response practices 83–4
  - demand-side incentives 80–84
  - Demand Side Management (DSM) programs 75–7
  - dynamic pricing initiatives 81, 83
  - energy efficiency and conservation measures 71–82
  - energy efficiency standards 77–8
  - energy R&D programs 84–5
  - EPA Regulations 56–64
  - federal scheme developments 52–4
  - federal tax incentives 74
  - feed-in tariffs (FIT) 73
  - Hazardous Air Pollutants (HAP) regulation 65–6
  - indirect regulatory mechanisms 65–8
  - integrated resource planning (IRP) requirements 79–80
  - interruptible load agreements 83–4
  - Investment Tax Credit (ITC) 74

- Mandatory Reporting Rules (MRR) 59–60
- Massachusetts* endangerment ruling 57–9, 273, 284, 488–90
- Mercury and Air Toxics Standards (MATS) 65–7
- National Ambient Air Quality Standards (NAAQS) 56–8
- net metering 72–3
- new source performance standards (NSPS) 61–4, 491–2
- Prevention of Significant Deterioration (PSD tailoring rules) 58–9, 489–90
- Production Tax Credit (PTC) 74
- Public Utility Regulatory Policies Act (PURPA) requirements 75–7
- Regional Greenhouse Gas Initiative (RGGI) 52, 69–70
- Renewable Energy Standards (RES) 72, 341–2
- renewable portfolio standards (RPS) 72
- Smart Grids 82–3
- smart meters 82–4
- State and regional initiatives 52–3, 68–71
- State Public Utility Commission policies 79–82
- Timing and Tailoring Rules 60–61
- federal regulatory powers 190–93
- interstate commerce 190–92
- greenhouse gas emission trends 52
- buildings, from 190
- industry, from 271–2
- industry
  - Best Available Control Technology (BACT) requirement 277–9, 285–6
  - California Global Warming Solutions Act (AB32) 286
  - cap-and-trade schemes 286
  - Center for Corporate Climate Change 282–3
  - Clean Air Act controls 272–3, 285
  - direct and indirect emissions 271
  - direct regulation 272, 287
  - EPA powers 273
  - federal programs 272–83
  - Green Chill program 283
  - High Global Warming Potential Partnership 283
  - mandatory GHG reporting rules 274–5
  - Massachusetts* endangerment ruling 57–9, 273, 284, 488–90
  - National Ambient Air Quality Standards (NAAQS) 275, 280
  - new source performance standards (NSPS) 280–81, 491–2
  - performance standards for non-GHG pollutants 281–2
  - prevention of significant deterioration (PSD tailoring rules) 275–9, 285–6, 489–90
  - Reasonably Available Control Technology (RACT) 286
  - sector definitions 271
  - SIPs programs 285–6
  - State programs 283–6
  - voluntary programs 282–3
- renewable/sustainable energy
  - energy generation 72
  - Renewable Energy Standards (RES) 72, 341–2
  - renewable portfolio standards (RPS) 72, 341–2
  - transport 137–42, 145–6, 148, 338–40
  - waste management 400–401, 404–6
- transport
  - 21st Century Truck Partnership 138
  - agriculture and forestry mitigation policies, overlaps and conflicts 338–40
  - alternative fuels, economic incentives 129, 142–5
  - ARPA-E role 138–9
  - biofuels 140–45, 338–40
  - California State initiatives 146–8
  - cap-and-trade programs 147–8
  - Corporate Average Fuel Economy (CAFE) standards 127–31
  - electric and hybrid vehicles, tax credits 145–6
  - emissions contribution to GHG 126, 159–60, 338

- energy efficiency incentives 136–9
- Energy Policy and Conservation Act role 127–9
- footprint method 130–31
- fuel economy standards, credit systems 132–3
- fuel economy standards, development 127–31
- fuel economy standards, violation penalties 129, 133–4
- ‘Gas Guzzler Tax’ 137
- Heavy Duty National Program 134–5
- Hydrogen and Fuel Cell Technology Program 138
- limitations 135–6
- Low Carbon Fuel Standard 147
- National Highway Traffic Safety Administration (NHTSA) role 128, 130
- National Program 127, 131–6, 148
- nitrous oxide and methane emissions caps 132
- reduction targets 148
- renewable fuel, consumer incentives 145–6
- renewable fuel, economic incentives 137–9
- Renewable Fuel Standard program 139–42, 148, 338–40
- tax credits 144–6
- US Drive program 138
- vehicle conversion tax credits 145–6
- vehicle emissions contribution to GHG 126, 159–60, 338
- vehicle technology incentives 137–9
- waste management
  - Advanced Notice of Proposed Rulemaking (ANPRM) 398–9
  - alternative strategies, impact of 376–7
  - best available control technology (BACT) requirement 387, 389–93, 396–7
  - biodegradable content in landfill 385–6
  - biogenic carbon deferral 393–7
  - biomethane, use policies 405–6
  - California AB32 initiative 399–406
  - California AB341 initiative 402–4
  - California Renewable Portfolio Standard 404–6
  - California waste-to-energy initiative 404–6
  - cap-and-trade programs 381–2, 399–401
  - contribution to GHG emissions 377–8, 380–81
  - Early Action Requirements, California’s AB32 initiative 401–2
  - Emission Guidelines (EG) 384–5
  - emissions control, importance of 377–9
  - emissions reduction trends 384–5
  - federal regulatory mechanisms 381, 384–9
  - landfill sites, growth trends 379–82
  - limitations 376–7
  - mandatory GHG reporting regime 383–4
  - New Source Performance Standards (NSPS) 384–9, 397–9
  - non-market-based mechanisms 400
  - Prevention of Significant Deterioration (PSD tailoring rules) 386–97
  - recycling initiatives 400, 402–4
  - regime exclusions 393–7
  - regulatory challenges 374–5
  - renewable energy influences on 400–401
  - state regulatory mechanisms 381–2, 399–406
  - UARG* ruling 388–9, 395–7
  - Waste Diversion Requirements, California’s AB341 initiative 402–4
  - waste-to-energy initiatives 404–6
  - wastewater treatment regime 384
- Vietnam
  - carbon trading 505
  - Japanese development assistance programs 538–9

- low carbon development strategy (LCDS) 296–8
- waste management
  - in Asia-Pacific
    - challenges 408, 415–16
    - in China 409, 415–21
    - climatic and cultural influences 415–16
    - focus of 408–9
    - foreign waste import controls 417
    - hierarchies for 409
    - incineration and waste-to-energy initiatives 413
    - industrial policies, overlap between 419–20
    - informal recycling mechanisms 409, 416
    - market-based instruments 419
    - national emissions diversity trends 408
    - population size, relevance of 407–8
    - recycling 412–14, 417–19
    - regulatory focus 408–9, 412–13
    - in Singapore 412–15
    - technical standards 419–21
    - volume trends 415
    - waste production trends 415
    - wastewater management 414–15
  - in EU
    - biodegradeable materials 364
    - carbon capture storage, and 371–2
    - hazardous waste incineration 369–70
    - landfill regulatory regime 363–4
    - policy development 361–3
    - Waste Framework Directive 363, 368–9, 372
    - waste incineration *vs.* energy recovery, ECJ rulings 365–8
  - generally
    - anaerobic digestion 362
    - anthropogenic emissions 375–6
    - bacterial processes 374–5
    - captured emissions, commercial uses for 376
    - climate change mitigation role 361–2
    - decomposition, products of 374
    - definitions 362
    - landfill carbon sinking 374–5
    - landfill emission avoidance, importance of 363
    - mechanical biological treatment 362
    - policy types 409–11
    - population size, relevance of 407–8
    - regulatory challenges 374–5
  - in US
    - Advanced Notice of Proposed Rulemaking (ANPRM) 398–9
    - alternative strategies, impact of 376–7
    - best available control technology (BACT) requirement 387, 389–93, 396–7
    - biodegradable content in landfill 385–6
    - biogenic carbon deferral 393–7
    - biomethane, use policies 405–6
    - California AB32 initiative 399–406
    - California AB341 initiative 402–4
    - California Renewable Portfolio Standard 404–6
    - California waste-to-energy initiative 404–6
    - cap-and-trade programs 381–2, 399–401
    - contribution to GHG emissions 377–8, 380–81
    - Early Action Requirements, California's AB32 initiative 401–2
    - Emission Guidelines (EG) 384–5
    - emissions control, importance of 377–9
    - emissions reduction trends 384–5
    - federal regulatory mechanisms 381, 384–9
    - landfill sites, growth trends 379–82
    - limitations 376–7
    - mandatory GHG reporting regime 383–4
    - New Source Performance Standards (NSPS) 384–9, 397–9

- non-market-based mechanisms 400
- Prevention of Significant Deterioration (PSD tailoring rules) 386–97
- recycling initiatives 400, 402–4
- regime exclusions 393–7
- regulatory challenges 374–5
- renewable energy influences on 400–401
- state regulatory mechanisms 381–2, 399–406
- UARG* ruling 388–9, 395–7
- Waste Diversion Requirements, California’s AB341 initiative 402–4
- waste-to-energy initiatives 404–6
- wastewater treatment regime 384