Index

absolute decoupling 215, 223, 227
Abu Dhabi 261
accessibility 10, 194, 259, 262
measures 34–7
see relative accessibility, space time accessibility; sustainable accessibility
active transport 264
see walk, cycle
activism 22
activity-based approach 76
activity space 35
adaptive capacities, 54
advocacy coalitions 46
aeromobility 48
Aerotropolis 69
after the car 257
age 17, 19
air freight transport 157
air pollution 172–3, 213, 258
human health 172
see road transport, rail transport, maritime transport, air transport
air transport 6, 212, 214, 259, 271, 273
air pollution 172
GHG emissions 170
management and operational practices 181
aircraft 93–4
morphing airframes 94
allocation of scarce resources 78
alternating current 101
Amazon 154
Americas 4
anthropologic climate change 213, 231, 235, 241, 242
see GHG emissions
Apple 162
Arctic 256
Asia 4
Asia Environmental Partnership’s (USAEP) 151
Asian economic crisis 155
attitude 66
austerity policies 272
automobile 15, 17, 19–22
see car
automobility 20, 48, 257
automobility regime 271, 279
autopoiesis 196
aviation 170, 271
fly-by-wire, fly-by-light 94
laminar flow and control systems 94
see air transport
avoid policies 8, 223
see travel
Bangladesh 159
battery electric vehicles (BEVs) 114, 123, 212, 240–41, 246
see technological developments
behaviour change 194, 196, 202
see travel
economics 88
bicycle 264
see cycle
biodiesel 118, 122
biodiversity 175–6
biofuels 114, 118, 122, 178–9
biomass 118
blended wing body 94
BMW 159
Boeing 157
Bogota 260
Boston 21
Brazil 155, 210, 256
BRIC countries 255
see Brazil, Russia, India, China
bus rapid transit 260, 269
see public transport

285
Moving towards low carbon mobility

business as usual (BAU) 211, 218, 219, 224, 225, 226
see economic growth
business models 221, 224
business sectors 257
buy-use-trash culture 277

Canada 256
capability approach 219–20, 278
capacity 7, 123
capital 15–19
car 8, 280
dependency 37
industry 276
ownership 86, 213
see forced car ownership
regime 263
use 260
see automobile, after the car
carbon 2, 209, 210
carbon based fuels 257
carbon budgets 62
carbon capture and sequestration (CCS) 117–18
carbon dependency 1
carbon dioxide 4, 168, 215, 255
carbon emissions 5, 7, 15, 153, 160, 169
carbon footprint 1, 151–2, 259
carbon intensity 9, 123, 269, 271
carbon reduction 160, 169, 276
carbon savings 263
cargo 153
see freight
catalytic converter 4
change in ‘thinking’ 77–8, 87, 268
China 5, 155, 201, 212
government 159
cities 260
city transport 255–66
civil engineering 270
Clean Development Mechanism 139–41
clean energy projects 255
see renewable energy, wind power
clean technology 10
clear zones 264
climate change 15, 24, 160, 167, 267, 279
commodity 15, 16
see freight

commuting 214, 220
co-modality 276
compact city 64–5, 69, 260–61
complexity 191, 195, 268
sociologies of 232, 247–9
comprehensive action determination model 82
compressed natural gas (CNS) 116
congestion 8, 214, 269, 270, 271, 273
congestion charging 247, 270
consumers 113
consumption 220, 221, 242
consumption-based lifestyle 259
control 276
conventional accessibility (CA) measures 34
co-ownership 276
cost escalation 134
cost overruns 50
cost-benefit analysis (CBA) 202, 220, 270
critical mass 22
cultural meanings 276
culture 10, 15, 17–18, 20–21, 23–4, 271
cultures of aeromobility 273
cultures of automobility 273
cumulative-opportunity measures 34, 38
curtail measures 160
customers 150
cycle 10, 18, 20–22, 137, 260, 262
see bicycle
death of distance 69
decarbonising transport 212, 277
see carbon dioxide
decision-making 49, 277
socio-psychological 78–82
decoupling 211–23
see relative decoupling, absolute
decoupling
demand for transport 271
demand management 9, 51, 53, 124
dematerialization 216, 278
democratic legitimacy 249
denial 250
Denmark 21
densification of cities 217, 269
see compact city
density 64, 262
Index

Department for the Environment, Food and Rural Affairs (DEFRA) 152
derived demand 8, 269
desirable city 261
developed countries 159, 210, 213, 218, 221
development 219
discontinuity measures 55
discourse 243–6
disposal process 160
disruptive innovation 257
distance 1–3, 7, 221, 262, 271
distributors 149
disutility 270
door-to-door 276
downstream 160
driving 275
earthquake 157
Eastern Asian countries 157
eBay 154
e-business 154
ecological modernization 56, 213, 225
e-commerce 153, 159
economic activity 111–12
economic growth 7–8, 213, 215–16, 218–19, 224–7, 276–7, 279
public private partnerships 133
sustainability 131–2
transport investment 130–32
see business as usual
economic theory 219
economies of scale 216
efficient transport 7, 86–7
electric motors alternating current 101
permanent magnet 99
superconducting 94, 96
see battery electric vehicles
electricity demand 123
electricity system 209
emerging economies 113–14
emissions 151, 210, 258
factors 153
emission trading scheme (ETS) 141–2, 163
see externalities, air pollution, GHG emissions
employment 256
empty operation 152
end of pipe measures 55
energy 7, 255
mix 10, 115–25, 192
sector 99, 101, 214
security 124, 218
see imported oil, oil
engaging with citizens 264
England see UK
economy 2, 9–10
benefits 154
costs 259 fiscalfiscal reforms 141
impact 151
equality 10, 219, 220, 221–2
equality of opportunity 260
see social equity and justice, inequalities
ethanol 118, 122
earthquakes 157
ethnicity 17, 19
Europe 4–5, 260, 262
European Environment Agency 135
European Investment Bank 135
European Union (EU) 5–6, 152, 215, 225, 279
White Paper 135
evaluation practices 275
evidence-based policymaking 190
externalities 138
Federal Express 157
finance and investment 10, 194, 198
see evaluation, investment
austerity 250
crisis 279
flexibility 259, 263
flexible mobility 257
see mobilities
food prices 122
food-miles 217
forced car ownership 33
see car ownership
fossil fuels 112, 125–6
France 2
freedom 257, 276
freight 2, 6, 113, 135, 148, 216
freight trains 269
just-in-time 216
see logistics
frequency of travel 273
aviation 175
rail transport 175
road transport 174
fuel cells
hybrids 94
solid oxide 96, 99, 101
proton exchange membrane 99
see battery electric vehicles, hybrid
electric vehicles, hydrogen, and
hydrogen fuel cell vehicle
fuel efficiency 103, 214
fuel security 4
fuel taxes 260
see energy
full battery electric vehicles (BEV) 114, 123
see battery electric vehicles
functionings 219
future of the car 256
see car, automobiles
gas 116–17
gender 17–19, 23–4
General Electric 162
geographic information system (GIS)
36, 39
see GPS
geothermal 118
Germany 159
Ghana 247
GHG emissions 26, 37, 38, 159, 167
168–71, 181
by transport mode 104
see air pollution, environment
global
economy 154
oil consumption 4
reduction targets 255
Global Environment Facility 141
Global North 279
globalisation 154, 216, 255
glocalisation 216, 218
Golden Gate Bridge 22
governance 10, 43, 51, 278
see policy and politics
GPS 152
gravity-based models 34, 38
green economy 213, 269
green mobility 212
greenways 260
grid mix 124
gross domestic product (GDP) 112, 155, 213, 215, 219, 220, 225, 278
see economic growth
health 67
healthy lifestyle 264
see quality of life
high carbon mobility 7–9, 268
high-speed rail 213, 269, 271
see rail transport
highway transport 153
see road transport
home-working 217
Honda 158
hybrid electric vehicle (HEV) 96, 123, 240–41
regenerative braking (kinetic energy
recovery) 99, 102
see battery electric vehicles
hydrogen 122–3
hydrogen fuel cell vehicle (HFCV) 122, 123
hydropower 118
hype-disappointment cycle 241
hypermobility 33
Icelandic volcano ash 158
Icon 256–7
see car, automobility
idle and transfer duration 151
imported oil 159
inbound logistics 149
income 258–60
India 139, 155, 210
individualism 257, 263
Indonesia 256
induced demand 9
industrialized 162
inequalities 222, 258
information and communication
technologies (ICT) 154, 217, 257, 272
infrastructure 273
infrastructure capacity 162
infrastructure lock-in 125
innovation 232–49
institutional thickness 244
inter-generational equity 198
intermodal transport 135, 240, 242
internal combustion engine
downsizing 97–98
  efficiency improvements 98
  powered 232, 234, 237, 240–42, 246, 248
internalization of externalities 138–9
international trade 154
intragenetational equity 198
investment 10, 135, 271–2
  investment in green infrastructure 271
  see economic growth and transport investment, finance, investment
jet engines (turbofans) geared 93
  unducted 93
knock-on effect 159
Kyoto agreement 6
land banking 260
land use 177
landscape 235–9, 241, 242, 244, 246
  see transition theory
latent or induced demand 271
leadership 260
lean distribution 151
leap frog 112, 125
life cycle assessment (LCA) 160
lifestyles 211, 218, 268
light duty vehicles (LDV) 114–15
  see cars, automobility
local governance 52
lock-in 224, 233–4, 238–9, 241, 247, 250, 256, 270
  see path dependence
logistics 148, 159
  logistics design 154
  logistics efficiency 160
  see freight
London 66, 137, 244, 247, 260
long distance 6, 154
low carbon economy 213
  see environment, GHG emissions
low carbon mobility 3, 6, 9–10, 138, 163, 263, 267, 269, 271, 277
  see GHG emissions
low wage countries 157
magnetic levitation, ‘maglev’ 102
management 233, 238–9, 240, 243, 246, 249–50
manufacturers 149
  multinational manufacturers 155
maritime transport 170
  see shipping
  air pollution 172
  GHG emissions 169
  biodiversity, wildlife 176–7
Masdar 261
mass production 215
megacity 60
  see cities
megaprojects 280
messy problems 45
metacity 60
  see cities
Mexico 139
microeconomic theory 269
Middle East 250
minimum travel time 270, 272
  see travel time
mixed use urban development 262, 269
  see cities
mobilit(y)ies 1–3, 209, 211, 261, 268
  as culture 17
  codes of 17, 18
  cultures 10, 15, 17–18, 20–24, 222
  forms of 17
  gendered 19
  knowledge 18
  management 240
  norms 17
  paradigm 3, 15, 17
  passenger 22
  performing 15, 20
  practices 17, 20
  practicing 17
  production of 17
  unsustainable 15
  unequal 18, 19
  mode shift 217, 269, 270
modern society 159
monitoring mechanism system 151
motor manufacturers 256
movement 16, 18
  see mobility
Moving towards low carbon mobility

multi-level perspective 232, 233–49
see transition theory

Nationally Appropriate Mitigation Actions (NAMA) 141

need to travel 262
see avoid policies

neighbourhood 261–2

neoclassical economics 78, 270

neoliberal 64, 276

Netherlands 21, 233, 237, 239, 240, 244, 250

network effects 124, 138

networked polity 46

new habits 264

New Industrializing Countries 210, 213, 218, 221

new urbanism 65
see neighbourhood

New York City 21

niche 235–42, 244, 246, 249

Nissan 158

noise 173–6, 213, 258
see environment

non-motorized modes 32, 34, 36–7, 217, 276
see walk, cycle

non-linearity 196

non-renewable resources 2

norm activation theory 80, 84

norms 17

Norway 19

novel fuel options 103

nuclear 117

ocean freight 152

offshoring strategies 157

offset 255

oil 255
industry 256
prices 4, 214
see imported oil

Open spaces 264

Operating cost 163

Organisation for Economic Co-operation and Development (OECD) 112, 114–17, 122, 210, 213, 221

Outbound logistics 149

Out-of-vehicle 217

Outsourcing 162

Ownership 220, 257
see car ownership

Oxford 66

particulate traps 4

path dependence 224, 231, 256
see lock-in

pathway 9, 209, 210, 223

peak oil 115–16, 192, 214, 226, 279
see oil

peak travel 192

personal rapid transit 257, 261–2

photovoltaic 118, 125

physical inactivity 33, 258, 262

place 271

planning 270
planning processes 280

plug-in hybrid electric vehicles (PHEV) 114, 123
see battery electric vehicles, hybrid electric vehicles

policy and politics 16, 17, 20, 43, 243, 250

domains 200
frames 200
incentives 153
intervention 45, 47
leadership 250
measure 47, 209
packages 86
process 45
subsystem 45
see governance

politicization of climate change research
see climate change, governance

pollutants 4
see air pollution
polycentric 65, 69
see urban form
population growth 112
positivism 202
post carbon society 9, 255–66
poverty 220
power 17–19, 24, 276

practice theory
see theories of social practices
practices 277
predict and provide 9, 53, 196, 270

Moshe Givoni and David Banister - 9781781007235
Downloaded from Elgar Online at 07/15/2019 08:44:37AM via free access
Index

price promotion 85
pricing of carbon 217
primary energy demand 111
see energy
principle of least effort 78
private finance 132–4
see finance and investment, public
private partnerships
private sector 214
private transport 220
see car, automobility
privileged position 263
process advocacy 45
production 17, 220
capacity 115–16
chains 220
prosperity 219, 221
prosperity without growth 259
proton exchange membrane 99
proximity 262
public attitudes 215
public finance 132–4
public health 259
public private partnerships (PPPs)
determinants of PPPs 133
externalities 133
see externalities, private finance
public sector 215
public transport 26, 30–32, 33, 37, 217, 220, 260, 262, 269, 275, 277
see bus rapid transit
quality of life 260, 262–4
quantity of travel time 273, 274
radical policy 233, 234, 239, 250
radio frequency identification (RFID) 163
rail transport 171, 259
see high speed rail
freight 152
GHG emissions 171
Random Utility Theory 78
rationality 202
raw materials 149
reallocation of space 264
reasonable travel time 220, 264, 273
see travel time, time budget
rebound effects 151, 214, 223, 226
recession 225
recycle 160
regime 234–51
see transition theory
regressive policy measures 198
see policy and politics
regulatory policies 162
relative accessibility 35
see accessibility
relative decoupling 223, 225
see decoupling
reliable travel time 264
see travel time
renewable energy (RE) 118, 124, 125, 221
see energy
resource consumption 3, 258
retailers 150
risk sharing 132–4
road transport 169
crashes 98, 258
‘eco-driving’ 100
GHG emissions 169
human health 172
noise 174–5
pricing 53
see cars, automobility
rolling resistance 100
Russia 157
San Francisco 21
saturation of the demand for travel 279
save the time 270, 272
see travel time, time budget
scale of change 6
scarcity 241
sea 6
see shipping, maritime transport
selection pressures 53
self-selection 66–8
service 162
shift policies 8, 223
shipping 214
cost 154
volumes 96–7, 212
hull-propeller optimization 96–7
see sea, maritime transport
short distance 6
short haul 153
shorter travel times 271
slow travel 218, 221
Moshe Givoni and David Banister - 9781781007235
Downloaded from Elgar Online at 07/15/2019 08:44:37AM
via free access
smart city 125
  see cities
smart grids 124–5
smart phone 259
smart vehicles 257
smarter choices 196
social change 10, 279
social costs 259
social equity and justice 244, 249
  Social Exclusion Unit 19, 31
  social exclusion 26, 29, 31, 33–4, 37
  social inclusion 26, 29, 30, 32–3, 36, 37
  social justice 220
  see equality, inequality
social norms 9, 215, 219, 220, 277
social practices 232, 245–7, 249
socio-technical system 257
  socio-technical transition 44, 221–2
  see transition theory
soft policy measures 137
soil erosion 177
sourcing and distribution centre 160
South Korea 159
space-time accessibility (STA) measures 34, 35
  see time budgets
space-time prisms 35
speed 213, 217, 271, 273
sport utility vehicle (SUV) 241
sprawl 69
  see urban
stock level 151
strategic niche management 233, 238, 240, 243
structuration 43
subjectivities 243, 249
subsidy 255
substitutes for transport 221, 271
suppliers 149
supply chain 10, 148, 216
  supply chain management 159
surface transport 212
sustainability 9, 15, 231, 242, 258
  sustainable accessibility 34
  sustainable economy 163
  Sustainable urban blueprint 261
Sustrans 22
symbolic icon 259
synchronization 247
systematic change 2, 213, 231–5, 239, 240, 242, 243, 245, 249–51
system feedback 196
taxation 4
taxi 30, 34, 37–8
technological developments 7, 10, 213–14, 263–4
technological fix 212, 280
teleconferences 217
TEN-T 135
  see high speed rail
The Middle East 157
typical of interpersonal behaviour 80–81, 84
theory of planned behaviour 79–80, 84
third party logistics providers 149
Thomas Cook 220
tidal 125
time budget 87, 271
clock time 269
time-geography 16, 34, 38, 82, 86
time strategies 233, 238–9
time windows 152
tipping point 231, 248
Toyota 158
trade 218, 255
traffic flow 270
train travellers 101, 103, 274
  see rail
transit orientated development 65
transition theory 9, 209, 213, 231–51, 261
  see regime, landscape, niche
transport 1, 3, 10 See Mobility
Activities 159
Benefits direct and indirect 130
Business 256
Carriers 149
Decision-making 269
Governance 194
Greener 272
Infrastructure investment 3, 130–132, 269–270, 271, 277
Planning 8, 270
Policy 277 see Policy and politics
Technology 197
transport ‘thinking’ 268, 269
travel 15, 16, 18–23
  behaviour 10, 213, 222
demand 75
speed 8
time 49, 87, 269, 270, 272, 274, 276
time budgets 270–71
time reliability 217
time savings 8, 269
  see transport
trip-based approach 76
ultimately recoverable resources
  (URR) 116
unintended effects 50, 54
United Kingdom (UK) 2, 6, 22, 137, 240, 258–259
United States 2, 4, 21, 155, 270
UPS 157
upstream 160
urban 10, 60, 62, 69–70, 113, 193, 199
  air pollution 172
densities 257
  see densities
  form 62–63
migration 113
planning 193
rennaissance 65
sprawl 214
  see cities, sprawl, neighbourhood
utilitarian, understandings of
  transport 190, 197
utility 269
  theory 78, 84
valorize speed 271
value belief norm theory 80–81, 84
value of time 8, 269
  see travel time
variable generation 125
vehicle light weighting
  fly-by-wire, fly-by-light 94
mass decompounding 100
material substitution 94, 97, 100, 102
  see efficient transport, fuel efficiency
virtual mobility 38, 262
  see teleconferences
Visioning and Backcasting in
  Transport (VIBAT) 209
walk 10, 18, 20–21, 260, 262
  see low carbon mobility
  and cycling 217, 221, 269
Wal-Mart 149
warehouses 150
water quality and soil erosion 176
wealth 17, 19, 219
wellbeing 219, 222, 260, 278
Western economies 154
Western Europe 270
wicked problems 45
wider benefits 131
wildlife 175–6
wind power 118, 123, 125
  see renewable energy
World Bank 134, 141
  see Global Environment Facility and
  Clean Development Mechanism
World Carfree Network 22
World Economic Forums (WEF) 154
world economy 154
  see economic growth, globalisation,
  economic activity
zero emission vehicles (ZEVs) 212, 223
Zurich 68