Index

ACE. See Area control error Adjusted reserves, 187, 203, 204, 206 Advanced lead-acid batteries, 122, 123, 125, 127, 281, 282 Advanced meters, 151-152 AFBC. See Atmospheric fluidized-bed combustion AFUDC. See Allowance for Funds Used During Construction Alaska Systems Coordinating Council (ASCC), 211-212 Allis Chalmers Corp., 273 Allowance for Funds Used During Construction (AFUDC), 48, 68 Alternative technologies. See New technologies Amorphous-silicon flat-plate modules, 79-80, 257 ANMPA. See Arizona-New Mexico Power Area Aquifer reservoirs, 121, 122 Area control error (ACE), 164, 177-179 Arizona-New Mexico Power Area (ANMPA), 184, 189 ASCC. See Alaska Systems Coordinating Council Atmospheric fluidized-bed combustion (AFBC) commercial prospects, 22-23, 112-113, 115, 278 cost and performance, 115-117, 311 current activities. 140 environmental issues, 243, 245 industry development, 277-278 nonutility profitability analysis, 235, 236, 239 overview, 112-113 regional opportunities, 200 technology, 113-115 utility cost analysis, 224 Automatic generation control, 176-179 Avoided costs, 23, 30, 35, 42, 69, 190-192, 240, 241, 294, 297-298 Balance of system (60 S), 83 Battery Energy Storage Test (BEST) Facility, 280, 281 **Battery storage** commercial prospects, 24, 118, 122-123, 281-282 cost and performance projections, 123-129, 316 industry development, 280-281 load management use, 157 overview, 122-123 regional opportunities, 200, 213 technology, 20, 123, 127 utility cost analysis, 224 Bechtel Power Corp., 273 Beckjord Unit 1, 140 **BEST Facility. See Battery Energy Storage Test Facility** BGC. See British Gas Corp. Binary cycle systems, 23, 99-102, 267 BOS. See Balance of system Breakeven analysis, 234-238 British Gas Corp. (BGC), 273, 275 Brunner Island Station, 140 Bubbling beds, 114-115 Bulk power transactions, 30, 65-66, 203-208, 210-213, 215 Bureau of Land Management, 268

CAES. See Compressed-air energy storage facilities California-Southern Nevada Power Area (CSNPA), 183, 189, 210, 211 Capacity margins, 187 Capacity planning, 68-69 Cash return, 234 Central controllers, 154-155 Central Hudson Electric & Gas, 172 Central receivers, 24, 84, 88-89, 259, 261 CG&E. See Cincinnati Gas & Electric Co. Cincinnati Gas & Electric Co. (CG&E), 140 Circulating beds, 115 Cogeneration, 23, 30, 42, 70, 112, 113, 115, 116, 165, 198-199, 204, 210, 212, 215, 270, 278 Colorado Ute Electric Association, Inc., 140 Combustion technologies. See Atmospheric fluidizedbed combustion; Conventional technologies; Integrated gasification/combined-cycle powerplant Commercial deployment accelerated development, 2-3 advanced meters, 152 atmospheric fluidized-bed combustion, 112-113, 115, 277-278 batteries, 122-123, 280-282 compressed air energy storage, 121, 278-280 demonstration needs, 34-35 fuel cells, 102-103, 269-272 geothermal prospects, 98, 100, 266-269 industry factors and, 32-33 integrated gasification/corn bined-cycle powerplants, 108, 110, 272-277 new technologies, 3-4, 22-25 photovoltaic systems, 78-80, 253-258 solar thermal-electric powerplants, 86, 87, 89-91, 259-262 tax incentives and, 36 wind turbines, 92-93, 262-266 Commercial sector, 145, 150 Communications technologies, 155-156 Comparative cost analysis, 222-225, 246-248 Comparative profitability analysis, 234-241, 248-250 Compressed air energy storage (CAES) commercial prospects, 24, 118, 121, 279-280 cost and performance projections, 121-122, 315 environmental issues, 121-122 industry development, 278-279 overview, 118-121 regional opportunities, 200 technology, 20, 118-121 utility cost analysis, 224 Concentration photovoltaic systems, 78-79, 83, 257 ConEd. See Consolidated Edison Co. Conservation, 64, 157, 188, 215 Consolidated Edison Co. (ConEd), 173 Construction costs, 44, 46 Construction Work in Progress (CWIP), 48, 192 Conventional technologies, 19, 25, 64, 141, 235, 236. See a/so Load management; Plant betterment

Cool Water demonstration project, 22, 110-111, 273, 275 Cooperative agreements, 3, 270 Cost analysis, 222-225, 246-248 Cost and performance alternative technologies, 21 atmospheric fluidized-bed combustion, 115-117, 311 batteries, 123-129, 282, 316 compressed air energy storage, 121-122, 280, 315 conventional generating technologies, 141 data needs, 258, 265, 275-276 fuel cells, 103-108, 272, 313 geothermal systems, 98, 100-103, 268, 309 improvement needs, 257, 268, 272, 275, 280, 282 integrated gasification/combined-cycle powerplants, 110-112, 275-276, 312 photovoltaics, 79-84, 257, 258, 304 plant betterment projects, 137, 139 policy options, 286-289 solar thermal-electric systems, 86-91, 306-307 wind turbines, 23, 93-96, 265, 308 Cross-technology comparison issues, 243, 245 nonutility producers, 234-241 utilities, 224 Crystalline silicon cells, 79, 257 CSNPA. See California-Southern Nevada Power Area Current harmonics, 163-164, 167 **CWIP. See Construction Work in Progress** DCP, See Design change package Debt service coverage ratio, 62, 234 Decision-logic technologies, 156-157 Demand growth, 8, 44, 46, 59, 183, 185, 187, 203-207, 211, 212, 214, 227 Demand management, 143 Demand-subscription service meter, 152 Department of Energy, 29, 171, 259, 267, 270, 273, 274, 277, 280 Deregulation, 35, 298 Design change package (DCP), 136 Detroit Edison Co., 274 Developing technologies. See New technologies Direct control systems, 152 Dispatchable applications, 19, 75 Dispersed generation sources (DSGS), 29, 68 costs of interconnection, 169-170 electric system operations factors, 176-179 electric system planning factors, 174-176 guidelines for interconnection, 170-174, 295 interconnection issues, 162-165 interconnection performance, 165-166 interconnection requirements and, 258, 266, 269, 272 overview, 161-162 policy options, 295, 299 protection issues, 167-169 regional opportunities, 211 technology, 163 Distributed control systems, 154, 156 Distribution planning, 175-176, 220-221

Diversification, 64, 66, 70, 296-297 Dow Chemical, 273, 274 **DSGS.** See Dispersed generation sources Dual-flash systems, 97-99, 267 Duke Power Co., 140 Dynamic stability, 179 East Central Area Reliability Coordination Agreement (ECAR), 187, 188, 203 ECAR. See East Central Area Reliability Coordination Agreement EDA. See Energy Development Associates Electricity demand growth. See Demand growth Electric power industry, 7-8, 10-12, 58. See a/so Nonutility power generation: Utility investment Electric Power Research Institute (EPRI), 29, 147-149, 154, 171, 175, 267, 270, 273-275, 277-281, 299 Electric Reliability Council of Texas (ERCOT), 183, 187-200, 204 Empire State Electric Energy Research Corp., 273 End-use sectors, 143, 145-146 Energy Development Associates (EDA), 281 Energy Sciences, Inc., 263 Energy storage, 117-118. See also Battery storage; Compressed-air energy storage **Environmental issues** atmospheric fluidized-bed combustion, 243, 245 combustion technologies, 243, 245 compressed air energy storage, 121-122 cross-technology comparison, 243-244 fuel cells, 245 geothermal systems, 98, 100, 245 integrated gasification/combined-cycle plants, 243, 245, 276-277 photovoltaic systems, 80-81, 245 plant betterment, 135, 139 regional, 203, 205, 207, 214 solar thermal-electric powerplants, 91, 245 wind turbines, 93, 245 Equipment cost and performance, 257, 268, 272, 275, 282 ERCOT. See Electric Reliability Council of Texas Federal Energy Regulatory Commission (FERC), 192, 211 Federal Power Act of 1935, 43-44 Federal support, 255, 259, 260, 262, 267, 268, 270, 273, 274, 278-280, 286-287 FERC. See Federal Energy Regulatory Commission Financial performance, 46, 48-49, 55-56, 60-61, 68 Financing, 46, 230-234, 259, 260, 263-264 Flat-plate photovoltaic systems, 78-80, 83 FLEXPOWER, 281 Florida Power Corp., 140 Fluidized-bed combustion, 20. See ako Atmospheric fluidized-bed combustion Flywheels, 118 Foreign competition, 24, 257, 258, 263, 271, 280-281 Foreign markets, 4, 258, 263, 266, 288-289 Fuel cells commercial prospects, 23, 102-103, 271-272 cost and performance projections, 103-108, 313

environmental issues, 245 industry development, 269-271 nonutility profitability analysis, 235, 238, 240 overview, 102-103 regional opportunities, 200, 213 technology, 20, 103 utility cost analysis, 224 Fuel prices, 44, 225 Fuel reliance, 194-195, 203-207, 209-212, 214-215 Fuel supply contracts, 232 Fuel Use Act. See Powerplant and Industrial Fuel Use Act of 1978 Full-avoided cost, 69 Gas Research Institute (GRI), 270 General Electric, 273 Generating capacity, 8, 25, 29-30, 61-62, 225, 229, 230 Generation mix, 44 Generation system planning, 174-175, 220 Georgia Power & Light Co., 168 Geothermal Loan Guarantee Program, 267 Geothermal power stations binary cycle systems, 23, 99-102, 267 commercial prospects, 23, 98, 100, 267-269 cost and performance projections, 98, 100-103, 309 dual-flash systems, 97-99, 267 environmental issues, 98, 100, 245 industry development, 266-267 nonutility profitability analysis, 235, 236, 240, 241 overview, 96 regional opportunities, 31, 199, 210, 212, 213 technology, 20, 96-100 utility cost analysis, 224 Government-owned power systems, 58 Great Plains Gasification Associates, 273 GRI. See Gas Research Institute Harmonic voltages, 163-164, 167 Hawaiian Electric Renewable Systems, Inc., 213 Hawaii Electric Light Co. (HELCo), 178 Hawaii region, 212-214 HELCo. See Hawaii Electric Light Co. HFM. See High-frequency modulation High-frequency modulation (HFM), 167-168 Houston Lighting & Power, 177 IEEE. See Institute of Electrical and Electronic Engineers IGCCs. See Integrated gasification/combined-cycle powerplants Illinois Power Co., 273 Induction generators, 163-164, 169 Industrial sector, 145, 150 Information collection, 289 Innovative rates, 147-148, 150 Institute of Electrical and Electronic Engineers (IEEE), 29, 171 Insurance coverage, 140 Integrated gasification/combined-cycle powerplants (IGCCs)

commercial prospects, 22, 108, 110, 275-277 cost and performance projections, 110, 312 environmental issues, 243, 245, 276-277 industry development, 272-275 overview, 108, 110 regional opportunities, 200 technology, 20, 108 utility cost analysis, 224 Interconnection costs, 169-170 definition of terms, 164 issues, 162-165 performance, 165-166 policy options, 295, 299 protection factors, 167-169 requirement effects, 69, 258, 266, 269, 272 standards, 29, 170-174, 295 See a/so Power transfers Interest coverage ratio, 62, 227 Internal rate of return (IRR), 234, 238-240 International cooperation, 270 Interregional transmission. See Power transfers Inverters, 163 Investment decisions. See Nonutility power generation; Utility investment Investor-owned utilities (IOUs), 58, 64, 147, 212 Investor Responsibility Research Center (IRRC), 229, 240 IOUs. See Investor-owned utilities IRR. See Internal rate of return IRRC. See Investor Responsibility Research Center Japan Cool Water Program Partnership, 273 Japanese programs, 270-271, 280-281 Joint ventures, 233, 270 Kellog Rust, 273 LaJet Energy Co., 194, 260 LaJet, Inc., 90, 91, 260 Land access, 265, 268-269 Lead-acid batteries, 122, 123, 125, 127, 281, 282 Lead-times atmospheric fluidized-bed combustion, 23, 117 batteries, 123 compressed air energy storage, 24, 122 fuel cell systems, 104 geothermal systems, 23, 98, 101 integrated gasification/corn bined-cycle combustion, 22, 108, 110 investment decisions and, 62 photovoltaic systems, 81 policy options, 287-288 solar thermal-electric powerplants, 91 wind turbines, 94 Leasing, 233, 268-269 Levelized busbar costs, 222, 224, 225, 246-248 Lewis Research Center, 270 Licenses, 192, 265, 269, 272, 276, 280, 282, 294 Life extension. See Plant betterment Lifetime rate requirements, 55

Limited partnerships, 233, 260, 263-264 Load control activities, 148-151 systems, 152-157 Load dependence, 68 Load forecasting, 220 Load-leveling, 117 Load management business strategies, 64 constraints, 21, 157-158 customer controlled technologies, 157 dispersed source generation use, 299 end-use sector variables, 143, 145-146 innovative rate activities, 147-148, 150 investment factors, 226-227 load control activities, 148-151 overview, 142-143 peak load reduction potential, 149-151 prospects for, 25, 28 regional opportunities, 30, 188-190, 213-215, 226-227 technologies, 20, 151-157 variables, 146-147 LOLP. See Loss of Load Probability Longevity improvements, 136 Loss of Load Probability (LOLP), 54-55 Lurgi Gesellschaften, 273 Luz Engineering Corp., 259-260 Luz Industries (Israel) Ltd., 260 MAAC. See Mid-Atlantic Area Council McDonnell Douglas, 260 MAIN. See Mid-America Interpool Network MAPP. See Mid-continent Area Power Pool Meters, 151-152, 168-169 Mid-America Interpool Network (MAIN), 187, 195, 205-206 Mid-Atlantic Area Council (MAAC), 183, 188-190, 204-205 Mid-continent Area Power Pool (MAPP), 187, 200, 206-207 Minimum revenue requirement approach, 222-225 Moonlight program, 271, 280 Mounted-engine parabolic dish, 90, 91, 262 Municipal utilities, 58, 148 NARUC. See National Association of Regulatory Utility Commissioners NASA. See National Aeronautics and Space Administration National Aeronautics and Space Administration (NASA), 270 National Association of Regulatory Utility Commissioners (NARUC), 188 National Electric Code (NEC), 29,.171 Natural gas restrictions, 3, 35, 60, 211, 277, 297 NEC. See National Electric Code NERC. See North American Electric Reliability Council New Source Performance Standards (NSPS), 135, 139 New technologies accelerated development, 2-3

advantages, 1-2, 67-68 commercial generating prospects, 3-4, 22-25 comparative cost analysis, 222-225, 246-248 cost and performance, 21 current activities, 25, 70, 129 description, 20 disadvantages, 2, 68-69 industry characteristics, 32-33 investment in, 31-32, 42, 59-60, 227-228 lead-times, 21-22 nonutility profitability analysis, 234-241, 248-250 overview, 19-21, 75 policy goals, 33 policy options, 33-36 regional opportunities and, 199-200, 204-209, 211-214 tax incentives, 36-37 See a/so Dispersed generation sources; Nonutility power generation New York State Electric & Gas, 171 Nondispatchable applications, 19, 68, 75 Nonutility power production accelerated development, 3, 4 cross-technology profitability comparison, 234-241, 248-250 investment decisionmaking, 32, 231-234 history, 228 market characteristics, 228-229 policy options, 290-295 producer characteristics, 229-230 role of, 11 utility interaction, 68-69 See also Dispersed generation sources North American Electric Reliability Council (NERC), 8, 183, 185 Northeast Power Coordinating Council (NPCC), 187, 189, 190, 195, 200, 207-208 Northwest Power Pool Area (NWPP), 210 NPCC. See Northeast Power Coordinating Council NSPS. See New Source Performance Standards Nucla facility, 140 Nuclear power, 49, 52-53, 62, 64, 204-209, 211 NWPP. See Northwest Power Pool Area Oak Creek Station, 140 Obsolescence, 257 Occupational Safety and Health Administration (OSHA), 167 Operations management, 174, 176-179 Operations planning, 176 OSHA. See Occupational Safety and Health Administration Overseas markets, 4, 258, 263, 266, 288-289 Ownership structure, 230-232 Pacific Gas & Electric (PG&E), 57, 63 Parabolic dishes, 24, 84-85, 90-91, 260-262 Parabolic troughs, 24, 85, 89-90, 259-262 PCS. See Power-conditioning subsystems Peak load reduction, 149-151 Pennsylvania Power & Light Co. (PP&L), 140 PEPCO. See Potomac Electric Power Co.

Performance test and analysis, 136, 137 Permits, 192, 265, 269, 272, 276, 280, 282, 294, 297 PFBC. See Pressurized fluidized-bed combustor PG&E. See Pacific Gas & Electric Phosphoric Acid Fuel Cell Program, 270 Photovoltaics (PVS) commercial prospect, 23-24, 78-80, 255-258 cost and performance projections, 80-81, 83-84, 304 environmental issues, 80-81, 245 industry development, 253-255 interconnection factors, 178-179 nonutility profitability analysis, 235, 238-41 overview, 77-80 regional opportunities, 211 technology, 20, 77-80 utility cost analysis, 224 PIFUA. See Powerplant and industrial Fuel Use Act Planning, 174-176, 220-221, 299 Plant betterment business strategies, 64-65 cost and performance, 137, 139 current activities, 140 insurance coverage, 140 objectives of, 135-137 overview, 133, 135 prospects for, 25 regional opportunities, 30, 195, 215 regulation of, 139, 226, 227 utility cost analysis, 224, 226 Policy options cost and performance related, 286-289 dispersed generation related, 295, 299 nonutility related, 290-295 overview, 285 utility related, 295-298 Port Washington Station, 140 Potomac Electric Power Co, (PEPCO), 140, 274 Potomac River Station, 140 Power-conditioning subsystems (PCS), 80, 81, 83, 167-168, 170 Power Cost Equalization Program, 211-212 Power factor, 164 Powerplant and Industrial Fuel Use Act of 1978, 35, 122, 211, 261, 277, 280, 297 Power quality, 163-164, 167-168 Power sales contracts, 232-233 Power transfers, 30, 65-66, 203-208, 210-213, 215 PP&L. See Pennsylvania Power & Light Co. Predispatch problem, 176 Pressurized fluidized-bed combustor (PFBC), 112 Prevention of Significant Deterioration (PSD), 139 Production Tax Credit (PTC), 36, 291 Productivity improvements, 136 Profitability, 60-61 Profitability analysis, 234-241, 248-250 Project financing, 231-233 Protection and control subsystems, 162-163, 165-166 PSD. See Prevention of Significant Deterioration permits PTC. See Production Tax Credit Publicly owned power systems, 58, 147

Public utility commissions, 11, 34-35
Public Utility Regulatory Policies Act of 1978 (PURPA), 3, 4, 22, 35, 42, 228, 230, 294-295, 297-298
Pumped hydro plants, 118
PURPA. See Public Utility Regulatory Policies Act of 1978
PVS. See Photovoltaics

R&D. See Research and development Reactive power, 163, 164 Rate of return, 234, 238-240 Rates battery storage and, 282 determination of, 223 innovative, 147-148, 150 load management and, 147-148, 150 minimizing, 55 nonutility generation and, 69 regulation, 190-191 research and development cost factors, 69 shock effects, 67 Real-time operations, 176 **Regional differences** avoided cost, 190-191 definition of regions, 183 demand growth, 183, 185, 187, 214 generation mix, 29-30 fuel reliance, 194-195, 214 load management, 30, 188-190, 213-214, 226-227 nonutility generation, 198-200 plant betterment opportunities, 195, 215, 226-227 power transfers, 30, 197-198, 203 region profiles, 203-214 reliability criteria, 30-31 renewable resources, 31 small-scale system regulation, 192 utility choice variables, 183, 214-215 Regional distribution load control activities, 148-149, 151 Rehabilitation. See Plant betterment Reliability, 30-31, 54-55, 67-68, 137-138, 197 Remote-engine parabolic dish, 90 Renewable Energy Tax Credit (RTC), 3, 24, 36, 241, 255-257, 260, 262, 264, 267, 268, 290-294 Research and development (R&D) accelerated development and, 3 atmospheric fluidized-bed combustion, 117 battery storage, 281 fuel cells, 108, 270-272 geothermal power, 267, 268 integrated gasification/corn bined-cycle plants, 274-275 opportunities for, 25 policy options, 33-35, 287-288, 295-296, 299 power transmission system, 213 rate setting and, 69 role of. 12 solar thermal-electric powerplants, 87, 90 utility activities, 70 wind turbines, 95-96

Reserve margins, 30-31, 185-187, 203, 204, 206, 208, 209. 214. 220 Residential sector, 143, 145, 147-151 Resource assessment, 257, 261, 264-265, 268, 289 Resource availability, 199-200, 215 Risk, 57 **Risk reduction, 232** RMPA. See Rocky Mountain Power Area Rock caverns, 119, 122 Rocky Mountain Power Area (RMPA), 210 Rotating generators, 163, 164 RTC. See Renewable Energy Tax Credit Rural electric cooperatives, 58, 148 Salt reservoirs, 119, 121, 122 Sandia Laboratory, 167, 168, 170 SEGS. See Solar Electric Generating System Sensitivity analyses, 224-225, 238, 240-241 SERC. See Southeastern Electric Realibility Council Shawnee Steam Plant, 115, 277, 278 Shell, 273, 275 Short-period analysis, 57 Silicon, 83 Single phase electromechanical watt-hour meters, 151, 152 Single-phase power, 164 Single watt-hour meters, 168 Siting policies, 192, 194, 297 Small Power Producer (SPP), 233 Sodium-sulfur batteries, 123 SOHIO, 273 Solar Electric Generating System (SEGS), 89, 90, 260, 261 Solar Energy Research Institute, 259 Solar One pilot facility, 259 Solar ponds, 85-87, 89, 259 Solar technologies, 76-77, 175, 200, 212-214 commercial prospects 24, 86-87, 89-91, 260-262 cost and performance projections, 91, 306-307 environmental issues, 91, 245 industry developments, 259-260 nonutility profitability analysis, 235, 238, 241 overview, 86-91 regional opportunities, 31 technology, 20, 84-86 See also Photovoltaics; Solar thermal-electric powerplants Solar thermal-electric utility cost analysis, 224 Solar troughs, 24, 85, 89-90, 259-262 Sole ownership, 231-232 SOLMET data, 257 Southeastern Electric Reliability Council (SERC), 187-190, 195, 208-209 Southern California Edison, 63, 260, 273, 275 Southwest Power Pool (SPP), 187, 189, 195, 200, 209-210 Soyland Electric Cooperative, 121, 122, 279 Special rates, 147-148, 150 Spinning reserve, 117

SPP. See Small Power Producer; Southwest Power Pool Standards interconnection, 170-174, 295 photovoltaic equipment, 258 wind turbines, 265 Storage, 117-118. See a/so Battery storage; Compressed-air energy storage Superconducting magnetic energy storage, 118 Susitna Project, 211 Sustainability, 61 Synchronous generators, 163, 164, 169 Synthetic Fuels Corp. 273, 274 System regulation, 117 Tax incentives, 3, 23, 24, 36, 240-241, 254-260, 262, 264, 266-269, 272, 290-294 Technology demonstration needs, 268, 272, 275-276, 281-282, 286-287 Tennessee Eastman Co., 273 Tennessee Valley Authority (TVA), 115, 140, 273, 277, 278 Texaco, Inc., 273 THD. See Total harmonic distortion The Geysers, California, 266 Thermal storage, 157 Three-phase power, 164 Toshiba, 270 Total flow systems, 96 Total harmonic distortion (THD), 163 Transient stability, 179 Transmission facilities, 265-266, 269, 294 Transmission planning, 175, 220-221 Treasury Department, 240 TVA. See Tennessee Valley Authority UCGA. See Utility Coal Gasification Association Uncertainty sensitivity, 224-225, 240 United Stirling, 260 United Technologies, 270 Utility Coal Gasification Association (UCGA), 275 Utility-grade relays, 164, 171-172 Utility grid, 162-163. See a/so Interconnection Utility industry structure, 58 Utility investment business strategies, 63-70 commercial deployment role, 34 comparative cost analysis, 222-225, 246-248 constraints, 219-220 current activities, 70 demand growth and, 46, 48-49, 52-53 extent, 42 financial criteria, 61-62 new technology prospects, 31-32, 53-54, 59-60, 227-228 objectives, 54-56 operations factors, 176-179 overview, 41 planning factors, 174-176, 220-222

policy options, 295-298 strategic options, 225-227 tax incentives and, 291-292 trade-off decisions, 56-60

Value studies, 174-175 Virginia Electric Power, Co., 274

Warranties, 258, 265
Washington Public Supply System, 49
WEPCO. See Wisconsin Power & Light
Western Systems Coordinating Council (WSCC), 183, 185, 189, 190, 195, 200, 210-211
Wind turbines
commercial prospects, 23, 92-93, 264-266
cost and performance projections, 93-96, 308
environmental issues, 93, 245

generating capacity, 230 industry development, 92, 262-264 interconnection factors, 177-179 nonutility profitability analysis, 235, 236, 238, 240, 241 regional opportunities, 31, 200, 211-214 tax incentive effects, 23, 36, 290, 291 technology, 20 utility cost analysis, 224, 225 Wisconsin Electric Power Co. (WEPCO), 135-136, 140, 169 Wood River facility, 273 WSCC. See Western Systems Coordinating Council Zinc-bromide batteries, 122-123

Zinc-chloride batteries, 122, 281, 282