

Technology	Advantages	Risks	Energy potential	Applicable Environmental Statutes	Comments
Conservation and smart-grid (negawatts)	Lowest cost, least environmental impact	Difficult to measure, doesn't expand capacity in cleaner technologies			New FERC Rule – 3/10/11
Hydrofracturing	Reduced footprint of production area, increased available of clean natural gas, most environmental activities far underground	Air emissions, water use and impacts, discharges of NORM, drinking water, land use impacts			
Wind	No emissions, no resource depletion	Variable, remote locations, required use of backup generators, species impacts, radar effects, "flicker effect", visual blight (or benefit?)	40 GW installed capacity  Offshore potential – 1000 GW		76 GW in offshore wind capacity worldwide in 2020; Galveston Wind; King Ranch
Utility Solar	No emissions, no resource depletion	Variable, limited in some geographic areas, limited storage, requires large land areas, some carrier liquids pose hazards	7,000 GW potential in seven states		
Distributed Solar	No emissions, enhanced robustness of grid	Toxics in manufacturing, variable, limited in some geographic areas	4,000 MW		
Biofuels	Renewable energy source, limited toxics emissions, already have infrastructure (7% of U.S. gas consumption)	Land use, crop competition, CO2 life cycle		Renewable Fuels Mandate; § 211(f) "substantially similar"	
Microgeothermal	Uses abandoned wells, saves well drilling costs, no discharges or	Requires numerous wells to generate significant energy, abandoned wells may leak		Ownership issues?	

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	emissions	into drinking water, remote locations, limits future use of wells for oil and gas production, requires use of water or other liquid			
Advanced nuclear	Pebble bed, thorium reactors  No meltdown, no emissions, large energy supplies	Waste, security, cost			
Hydrokinetic	Wave and tidal energy – higher efficiencies, new locations (dam flues), no emissions, renewable	Species, cost, location, variable supply (in some cases)		30,000 MW in U.S. potential	
Nano – fuel cells, solar, quantum armchair wire					