Energy conversion o In most processes, energy is constantly changing from one form to another.Reservoir Water Inlet Hydroelectric dam Electricity out Dam Generator Water Flow Turbine \ Water Outlet Temperature difference to Electrical Energy o Ocean thermal energy conversion uses the difference between cooler deep and warmer surface ocean waters to run a heat engine and produce electricity.J M 3 + 1 Surface Water–25?C 2 Evaporator 3 Waste Water–23?C 4 Turbine 5 Generator 10 + 5 > – 8 10 6 Line to the grid 7 Waste Water–7?C 8 Condenser 9 Deep Water–5?C 10 Circulation * 7 9 Nuclear Energy to Electrical Energy o Nuclear fission technology is applied for the generation of power.o Kinetic energy of expanding gas is converted to piston movement and hence to rotary crankshaft movement.The total energy input is recovered in various other forms and hence the energy is conserved Chemical Energy to Electrical Energy o Chemical energy stored in coal is released as heat when the coal is burned.o They provide the ability to store excess energy at the most convenient or cost–effective times, and release power to critical power loads when required, thereby increasing efficiency and reducing wastageExamples o The mechanical energy of a waterfall can be converted to electromagnetic energy in a generator.Thermal Energy to Mechanical Energy o Potential energy in the fuel is converted to kinetic energy of expanding gas after combustion.o Photosynthesis is the synthesis of carbohydrates from sunlight and carbon dioxide (CO2).o An internal combustion engine converts the potential chemical energy in gasoline into heat, which is then transformed into the kinetic energy that moves a vehicle.o Rotary crankshaft movement is passed into the transmission assembly to drive the wheels of a car.o .Warm surface seawater is pumped through a heat exchanger to vaporize the fluid