

SOLAR PV: BALANCE OF SYSTEM AND SYSTEM DESIGN may advance the following

ENERGY LITERACY PRINCIPLES AND CONCEPTS

1 Energy is a physical quantity that follows precise natural laws.

1.1 Energy is a quantity that is transferred from system to system.

1.3 Energy is neither created nor destroyed.

1.4 Energy available to do useful work decreases as it is transferred from system to system.

1.5 Energy comes in different forms and can be divided into categories.

2 Physical processes on Earth are the result of energy flow through the Earth system.

2.2 Sunlight, gravitational potential, decay of radioactive isotopes, and rotation of the Earth are the major sources of energy driving physical processes on Earth.

3 Biological processes depend on energy flow through the Earth system.

3.1 The Sun is the major source of energy for organisms and the ecosystems of which they are a part.

4 Various sources of energy can be used to power human activities, and often this energy must be transferred from source to destination.

4.1 Humans transfer and transform energy from the environment into forms useful for human endeavors.

4.5 Humans generate electricity in multiple ways.

4.6 Humans intentionally store energy for later use in a number of different ways.

4.7 Different sources of energy and the different ways energy can be transformed, transported, and stored each have different benefits and drawbacks.

5 Energy decisions are influenced by economic, political, environmental, and social factors.

5.2 Energy infrastructure has inertia.

5.3 Energy decisions can be made using a systems-based approach.

6 The amount of energy used by human society depends on many factors.

6.5 Social and technological innovation affects the amount of energy used by human society.

7 The quality of life of individuals and societies is affected by energy choices.

7.3 Environmental quality is impacted by energy choices.

7.4 Increasing demand for and limited supplies of fossil fuels affects quality of life.