

# Unit 5 - Week 3 - Energy Economics

## Course outline

How does an NPTEL online course work?

## Practice Assignment

### Week 1 - Introduction

Week 2 - Energy and quality of life, Country energy balance

### Week 3 - Energy Economics

Lecture 5A: Energy Economics - Part 1

Lecture 5B: Energy Economics - Part 2

Lecture 6A: Energy Economics - Part 3

Lecture 6B: Energy Economics - Tutorial

Additional learning and activity

### Quiz : Assignment 3

Assignment 3 Solutions

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Weekly Feedback

### Week 4 - Energy Resources

Week 5 - Non-Renewable Resource Economics

Week 6 - Preferences, Utility and Social choices

Week 7 - Public and private goods, Externalities

Week 8 - Energy and Financing

Week 9 - Input-Output Analysis

Week 10 - Primary Energy Analysis, Net Energy Analysis

Week 11 - Net Energy Analysis (Continued), Energy Policy

Week 12 - Energy policy (continued), Future Energy Systems

Text Transcripts

## Assignment 3

The due date for submitting this assignment has passed.  
As per our records you have not submitted this assignment.

**Due on 2020-02-19, 23:59 IST.**

1) Which of the following options does not consider time value of money? 1 point

- Net Present Value
- Benefit-to-cost ratio
- Simple payback period
- Internal rate of return

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Simple payback period

2) High discount rate implies: 1 point

- Abundance of capital
- High inflation rate of economy
- Scarcity of capital

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Scarcity of capital

3) Company X decides to invest in an energy savings project. 1 point

Which of the following criterion/criteria should be satisfied by the project so that the company decides to implement it?

- NPV of the project should be positive
- Internal rate of return should be less than the hurdle rate
- Benefit to cost ratio should be more than 1
- Payback period of the project should be more than the acceptable payback period

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
NPV of the project should be positive  
Benefit to cost ratio should be more than 1

4) A project has a life of 10 years and discount rate given is 15%. Values of Capital Recovery Factor and Present Value Factor are respectively: 1 point

- 0.3, 3.34
- 0.2, 5
- 3.34, 0.3
- 5, 0.2

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
0.2, 5

5) A solar PV plant of capacity 2 kW is installed on a rooftop of a small house. Capital cost of installation is Rs. 50000 per kW.

Due to this plant, consumer saves 100 units of grid electricity monthly, where average grid electricity price is 5 Rs. per unit.

Calculate the simple payback period (in years) for the plant.

**Hint**

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
(Type: Range) 16.50,16.70

6) A solar PV plant of capacity 2 kW is installed on a rooftop of a small house. Capital cost of installation is Rs. 50000 per kW.

Due to this plant, consumer saves 100 units of grid electricity monthly, where average grid electricity price is 5 Rs. per unit.

If life of the plant is 25 years and discount rate for the household is 10%, find the net present value, assuming electricity price and consumption remains same.

- 54,460 Rs.
- 45,540 Rs.
- 50,000 Rs.
- 23,000 Rs.

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
-45,540 Rs.

7) Which option amongst the following is best suitable for comparison of projects having different lifespans ? 1 point

- Annualized lifecycle cost
- Net present value
- Discounted payback period

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Annualized lifecycle cost

8) Accelerated depreciation cash flows are calculated at the end of every year during the lifespan of project. 1 point

- True
- False

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
False

9) Which of the following option(s) are below X-axis in McKinsey cost curve? 1 point

- Shifting to solar PV for electricity generation
- Replacement of incandescent bulbs by LEDs
- Aforestation of land
- Increasing share of nuclear power

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
Replacement of incandescent bulbs by LEDs

10) In an energy conservation project, 1000 kWh of energy is expected to be saved every year. The initial investment is Rs.14000 and a life of 10 years.

If the discount rate is 12%, determine the cost of conserved energy (in Rs./kWh).

**Hint**

No, the answer is incorrect.  
Score: 0

Accepted Answers:  
(Type: Range) 2.45,2.50

**1 point**