Energy: from fossil fuels to windmills

VOCABULARY PRACTICE
ADVANCED | C1

Name: _____ Date: _____

1 Match each advanced term with its definition.

1 energy transition ____	**a** the long-term structural shift from fossil-fuel-based to low-carbon energy systems
2 carbon lock-in ____	**b** dependency on carbon-intensive infrastructure that makes rapid change economically or politically difficult
3 negative emissions technology ____	**c** technology that actively removes carbon dioxide from the atmosphere
4 demand-side management ____	**d** strategies encouraging consumers to shift electricity use to off-peak times rather than only increasing supply
5 capacity factor ____	**e** the ratio of actual energy output to the maximum possible output of a power source
6 sector coupling ____	**f** integrating different energy sectors, such as electricity and heating, to improve overall system efficiency
7 energy poverty ____	**g** the inability of a household to afford adequate heating, cooling or electricity
8 just transition ____	**h** a shift to a low-carbon economy structured to protect workers and communities dependent on fossil fuel industries
9 externality ____	**i** a cost or benefit affecting a third party not directly involved in an economic transaction
10 embodied carbon ____	**j** the total greenhouse gas emissions associated with producing and constructing an asset before it becomes operational

2 Choose the most precise term for each context.

1 The long-term shift to low-carbon energy is the energy transition / a temporary fluctuation.

2 Dependency on carbon-intensive infrastructure is carbon lock-in / flexible adaptability.

3 Technology actively removing carbon from the atmosphere is negative emissions technology / emission-neutral technology.

Energy: from fossil fuels to windmills

4 Encouraging consumers to shift usage timing is demand-side management / supply-side expansion only.

5 The ratio of actual to maximum possible output is capacity factor / total installed capacity.

6 Integrating different energy sectors for efficiency is sector coupling / sector isolation.

7 The inability to afford adequate energy is energy poverty / energy abundance.

8 A shift structured to protect affected workers is a just transition / an abrupt shutdown.

3 Match the verbs with the noun phrases to form academic collocations.

1 accelerate ____	**a** an externality
2 mitigate ____	**b** embodied carbon
3 internalise ____	**c** energy poverty
4 quantify ____	**d** the energy transition
5 alleviate ____	**e** a just transition
6 decouple ____	**f** carbon lock-in
7 safeguard ____	**g** growth from emissions
8 offset ____	**h** capacity factor

Energy: from fossil fuels to windmills

VOCABULARY PRACTICE
ADVANCED | C1

4 Complete the analysis with terms from the box.

capacity factor | carbon lock-in | demand-side management | embodied carbon | energy poverty | energy transition | externality | just transition | negative emissions technology | sector coupling

Energy policy scholars examining the pace of the 1 _____ note that existing fossil fuel infrastructure creates significant 2 _____, since substantial sunk investment makes rapid abandonment economically and politically difficult regardless of climate urgency. Some analysts argue that meeting ambitious climate targets will require 3 _____ alongside emissions reduction, since some residual emissions from hard-to-decarbonise sectors appear practically unavoidable in the near term. Improving grid flexibility through 4 _____ can reduce the need for costly new generation capacity, while 5 _____, integrating electricity, heating and transport systems, offers further efficiency gains. Policymakers increasingly recognise that pollution represents a classic 6 _____, a cost historically borne by society rather than reflected in energy prices, though addressing this fully raises difficult questions about 7 _____, particularly for regions economically dependent on fossil fuel extraction. Meanwhile, rising energy costs disproportionately affect low-income households, highlighting 8 _____ as a pressing social concern alongside broader climate goals. Comprehensive assessment increasingly considers 9 _____, the full emissions embedded in manufacturing renewable infrastructure itself, alongside a technology's operational 10 _____, the ratio of actual output to theoretical maximum capacity.

5 Read the text and answer the questions briefly.

The politics of a just transition

Energy policy debates increasingly foreground the concept of a just transition, recognising that decarbonisation policy, however environmentally necessary, carries genuine economic costs concentrated in specific communities historically dependent on fossil fuel extraction and related industries. Proponents argue that failing to address these localised costs directly risks generating political backlash that could ultimately undermine broader public support for climate policy, regardless of its long-term environmental necessity. Critics of overly generous transition support counter that resources directed towards cushioning fossil fuel communities might achieve greater climate benefit if redirected towards accelerating deployment of renewable infrastructure elsewhere, reflecting a genuine tension between distributive fairness and aggregate efficiency in climate policy design.

1 What concept do energy policy debates increasingly foreground? _____

Energy: from fossil fuels to windmills

2 What does decarbonisation policy carry, despite being environmentally necessary? _____

3 What do proponents of a just transition argue failing to address these costs risks? _____

4 What do critics of overly generous transition support counter? _____

5 What genuine tension does this reflect? _____

6 Where are the economic costs of decarbonisation concentrated, according to the text? _____

6 Replace the words in bold with a precise term or collocation.

1 Existing infrastructure created dependency that made rapid change difficult. _____

2 The policy was designed to protect affected fossil fuel workers during the shift. _____

3 Pollution represented a cost borne by society but not reflected in prices. _____

4 Many households could not afford adequate heating or electricity. _____

OVER TO YOU

Write a 160-190 word critical commentary on how a just transition can balance climate urgency with fairness to affected communities, distinguishing observation from policy argument.

[ ] Use at least twelve target expressions. [ ] Include four academic collocations. [ ] Maintain a precise, balanced register.

Energy: from fossil fuels to windmills

VOCABULARY PRACTICE
ADVANCED | C1

ANSWER KEY

1 Advanced terms

1 a 2 b 3 c 4 d 5 e 6 f 7 g 8 h 9 i 10 j

2 Precise terms

1 the energy transition 2 carbon lock-in 3 negative emissions technology 4 demand-side management 5 capacity factor 6 sector coupling 7 energy poverty 8 a just transition

3 Academic collocations

1 d accelerate the energy transition 2 f mitigate carbon lock-in 3 a internalise an externality 4 h quantify capacity factor
5 c alleviate energy poverty 6 g decouple growth from emissions 7 e safeguard a just transition 8 b offset embodied carbon

4 Analysis

1 energy transition 2 carbon lock-in 3 negative emissions technology 4 demand-side management
5 sector coupling 6 externality 7 just transition 8 energy poverty
9 embodied carbon 10 capacity factor

5 Reading - suggested answers

1 A just transition.
2 Genuine economic costs concentrated in specific communities.
3 Generating political backlash that could ultimately undermine broader public support for climate policy.
4 That resources directed towards cushioning fossil fuel communities might achieve greater climate benefit if redirected towards accelerating renewable deployment elsewhere.
5 A tension between distributive fairness and aggregate efficiency in climate policy design.
6 In communities historically dependent on fossil fuel extraction and related industries.

6 Precise terms and collocations

1 carbon lock-in 2 a just transition 3 an externality 4 energy poverty

Over to you

Answers will vary. Look for conceptual precision, evidence-aware reasoning and balanced evaluation.