

Where energy comes from: renewable or not?

Lesson at a glance

Open by asking where the energy for a light or tablet comes from, then teach the renewable / non-renewable contrast with a modelled turf-card sort. Groups sort six energy-source cards onto labelled mats, check placements on the sorting-tree interactive, and pin each source on a shared Ireland outline. Pairs build one paper pinwheel to feel wind energy spin the blades, then record their sort and a wind note on the Investigation Journal page before a close.

Learning objectives

- Sort common energy sources into renewable and non-renewable
- Identify energy sources Ireland uses on a simple outline map
- Describe wind as a renewable source they can feel with a pinwheel

Before the bell – prep

Print one set of six energy-source cards and two labelled sorting mats per group. Pre-cut paper squares with diagonal slits (stop ~2 cm from centre), one per pair; count one pin per pair into a shallow pot. Sharpen pencils with rubbers. Keep two or three finished pinwheels ready if time or kit runs short.

Materials

Item	Qty	Per	Source	Low-cost substitute
energy-source cards (wind, sun, turf, gas, moving water, wood)	1	group	provided printable	six sticky notes with the source names and short clues written on them
sorting trays or mats labelled renewable and non-renewable	2	group	classroom	two sheets of paper with the group names written at the top
simple blank outline map of Ireland on the IWB	1	class	classroom	draw a very simple island outline on the board for the whole class to use together
small sticky notes or tokens for placing sources on the class map	6	class	classroom	write source names lightly in marker on the board outline as the class agrees each place
square paper for pinwheels (about 15 cm by 15 cm), slits pre-cut toward the centre	1	pair	classroom	any scrap paper trimmed into a rough square; pre-cut slits still preferred
pencil with rubber	1	pair	classroom	a short stick or straw with a soft eraser piece taped on for the pin
pin or push pin	1	pair	classroom	share a few finished pinwheels so every pupil can still feel a spin without pins
scissors (round tip)	1	pair	classroom	rely on pre-cut slits so pupils only fold and pin
Investigation Journal page	1	pupil	classroom	a blank page where pupils list renewable and non-renewable sources and note that the pinwheel showed wind energy

Safety watch-point

Pins are sharp — one per pair, adult or careful pupil pushes the pin, tips away from eyes and faces, no running; collect every pin into the pot before journal time.

Teaching moves

- **Renewable or not?:** Project only the short board contrast — keeps coming back vs will run out. Model aloud with the turf card: peat takes thousands of years, so non-renewable. Hold wood as renewable when trees are replanted; say that plainly now so groups do not stall later.
- **Sort the energy sources:** Hand out the six cards and the two labelled mats. Circulate asking ‘Will nature make more of this quickly?’ If a group stalls, re-voice the turf model. If moving water is treated as drinking water, point back to the card clue: rivers and dams that make electricity.
- **Check our sort on the board:** Drive the sorting-tree interactive in challenge mode, one source at a time. When a pupil places a card, ask another ‘Do you agree? Why?’ If the interactive is down, rebuild the two groups with paper cards on the board.
- **Energy on the Ireland map:** Use one shared blank Ireland outline on the IWB. Pupil helpers stick tokens while the class calls place plus renewable or non-renewable. Anchor wind on hills and coasts, turf on bogs, gas at power stations. Close with ‘Which renewable source might you see from a car window?’ — wind turbines.
- **Feel the wind: build a pinwheel:** Model the folds once with a pre-slit square. Pairs share one pinwheel; you or a careful pupil push the pin. When it spins, link aloud: moving air spun your blades the way wind spins a turbine — wind energy, renewable. Collect every pin into the pot before journal time.
- **Record on your Investigation Journal page:** Tell pupils what to record, not where boxes sit: renewable list, non-renewable list, and one short note that wind is renewable and the pinwheel spun from moving air. Check turf and gas sit in non-renewable as you circulate.

What it should show

Renewable: wind, sun, moving water, wood (with replanting). Non-renewable: turf, gas. Pinwheels should spin when blown or held in a gentle breeze. A group that puts wood with gas usually thinks a cut tree is gone forever — restate the replant idea. A stuck pinwheel is usually a pin too tight or slits not folded to the centre; loosen or refold rather than rebuild.

Misconceptions & interventions

- **‘Wood is non-renewable because once you cut the tree it’s gone.’** — Hold the wood card and say plainly: when trees are grown for fuel and replanted, wood keeps coming back — renewable. Contrast with turf, which forms far too slowly to replace.
- **Pupils treat the moving-water card as drinking water from a tap rather than power from rivers and dams.** — Point back to the card clue — rivers and dams that make electricity — and place it with wind and sun as a renewable source that keeps flowing.
- **‘Wind only counts on a very windy day, so it might run out.’** — Have them blow the pinwheel again: air keeps moving even as a gentle breath. Name that turbines on Irish hills use the same idea at a bigger scale, so wind is renewable.

**Differentiation**

Emerging	Developing	Proficient
• Sort wind, sun and gas first, then add the remaining three cards using the turf model as a prompt. • If build time is tight, share a finished pinwheel so every pupil still blows and feels the spin.	• Ask 'Why did you put that there?' for two cards in their own keep-coming-back / will-run-out words. • Fast finishers try the pinwheel near an open window and say what changes the spin.	• Add a sticky note naming one place they have seen that source (turbine, sunny panel, fire). • Invite a brief 'I have seen a turbine near...' contribution during the Ireland map beat.

Cross-curricular hook

Geography: place energy sources on the shared Ireland outline — bogs, hills, coasts, rivers — and name renewable or not.