

Electric Vehicles

It has been a fact of life for quite some time now that the world's oil deposits are finite and will eventually dry up. That is why the energy sector should already have replacement technologies in the „pipeline“ for when this happens, so that we have alternative energy sources to fall back on. The automobile industry is no exception and there are technologies that may prove to save us from oil dependency.

Many new vehicle technologies have the goal of steering automobiles away from a dependence on fossil fuels. One vision is an all-electric vehicle (EV) that uses no gasoline or diesel fuel and does not emit any carbon dioxide. But affordable and reliable EVs will require advances to be made in energy storage. Currently, batteries that store enough electricity to give a vehicle acceptable driving range are costly, bulky, and heavy. However, technology may provide new options. For instance, recent milestones in nanotechnology, applied to the lithium-ion battery, may permit significantly more energy to be stored in a smaller, lighter battery pack.

PHEVs, which is an acronym for plug-in hybrid electric vehicles, have conventional gasoline engines as well as batteries that can supply enough energy to travel 10 to 40 miles, depending on the kind of batteries used. The compromise may secure a significant place in the market sooner than later, the fact being that according to, for example, Toyota sales figures, one in four Aurises sold is a hybrid. They run on electric power until the batteries are discharged, then switch to gasoline for additional range. Alternatively, they use the electric engine for the most fuel-intensive processes, such as putting the car into motion, or low-effort processes, such as coasting.

EV and PHEV batteries are recharged on the fly by using the car's thermal and kinetic energy or by plugging them into an electricity source while the vehicle is parked. This provides the immediate benefit of shifting some transportation energy demand from onboard petroleum-based fuels to the electrical grid. However, carbon dioxide emissions would not decline proportionally because half of the electricity used to recharge the vehicle's batteries is produced at coal-based power plants.

Adapted from www.needtoknow.nas.edu

Ex. 1 Find the words or expressions in the text which mean the following:

- 1) not unlimited: _____
- 2) to move sth in a different direction from sth: _____
- 3) at a price most people can pay: _____
- 4) progress
- 5) big: _____
- 6) traditional: _____
- 7) movement: _____
- 8) driving at the same speed: _____
- 9) a process that doesn't require too much energy: _____
- 10) to use sth, e.g. an idea, for sth else: _____
- 11) to allow sth to happen: _____
- 12) the need for power: _____

Ex. 2 Match the expressions from the two columns into logical collocations:

- | | |
|-------------------------|-----------------------------------|
| 1) a fact | plants |
| 2) to have a technology | a significant place in the market |
| 3) alternative | a battery |
| 4) oil | process |
| 5) driving | of life |
| 6) to secure | energy sources |
| 7) a fuel-intensive | benefits |
| 8) to recharge | range |
| 9) power | in the pipeline |
| 10) immediate | dependency |

Ex. 3 Provide English equivalents of these expressions:

1) wyczerpać się	7) wyniki sprzedaży
2) sektor energetyczny	8) oparty na ropie
3) polegać na czymś	9) na bieżąco
4) paliwa kopalne	10) sieć elektryczna
5) kamień milowy	11) będący elementem
6) znacznie	wyposażenia
	12) dwutlenek węgla

Grammar corner...

There are two groups of words that are very easily confused in English - the first describes things and people (i.e. adjectives), and the second describes actions (i.e. adverbs). The former answers the question „what kind?“, the latter „how?“. You've seen several examples of both groups in the text.

Ex. 4 Choose the best option.

1. We need to come up with alternatively / alternative energy sources before oil runs out.
2. I'm not rally interested in currently / current events, there's too much drama on the news.
3. There's been a significantly / significant progress in the area of electric vehicles.
4. Eventually / eventual, we will have to replace oil with something else to burn.
5. Your salary should be proportionately / proportionate to your knowledge and experience.
6. There are computers that have no conventionally / conventional hard drive, they store everything, including the operating system, in an online cloud.
7. Because you were late with your essay, you're going to have to write an additionally / additional one.
8. Most windows in modern cars are electrically / electrical operated.

GLOSSARY	
finite	ograniczony
to steer away from sth	oddalać się od czegoś / trzymać się z dala
affordable	w przystępnej cenie
advances	postęp
bulky	duży i nieporęczny
conventional	konwencjonalny
motion	ruch
coasting	poruszanie się ze stałą prędkością
a low-effort proces	proces pochłaniający mało energii
to apply sth to sth	zastosować coś do czegoś
to permit sth	zezwoić / pozwolić na coś
energy demand	zapotrzebowanie na energię
a fact of life	oczywistość
to have sth in the pipeline	pracować nad czymś / opracowywać coś
alternative energy sources	alternatywne źródła energii
oil dependency	zależność od ropy naftowej
driving range	zasięg
to secure a significant place in the market	zapewnić sobie mocną pozycję na rynku
a fuel-intensive process	proces pochłaniający dużo paliwa
to recharge a battery	naładować baterię
power plants	elektrownie
immediate benefits	natychmiastowe korzyści
to dry up	wyczerpać się
to fall back on sth	polegać na czymś
fossil fuels	paliwa kopalne
a milestone	kamień milowy
significantly	znacznie

sales figures	wyniki sprzedaży
petroleum-based	oparty na ropie naftowej
on the fly	na bieżąco
electrical grid	sieć elektryczna
onboard	będący elementem wyposażenia
carbon dioxide	dwutlenek węgla
eventually	w końcu
proportionately	proporcjonalnie

ANSWER KEY:

Ex. 1

- 1) finite
- 2) to steer sth away from sth
- 3) affordable
- 4) advances
- 5) bulky
- 6) conventional
- 7) motion
- 8) coasting
- 9) a low-effort process
- 10) to apply sth to sth
- 11) to permit sth
- 12) energy demand

Ex. 2

- 1) a fact of life
- 2) to have a technology in the pipeline
- 3) alternative energy sources
- 4) oil dependency
- 5) driving range
- 6) to secure a significant place in the market
- 7) a fuel-intensive process
- 8) to recharge a battery
- 9) power plants
- 10) immediate benefits

Ex. 3

- 1) to dry up
- 2) the energy sector
- 3) to fall back on sth
- 4) fossil fuels
- 5) a milestone
- 6) significantly
- 7) sales figures
- 8) petroleum-based
- 9) on the fly
- 10) electrical grid
- 11) onboard
- 12) carbon dioxide

Ex. 4

- 1) alternative
- 2) current
- 3) significant
- 4) Eventually
- 5) proportionate
- 6) conventional
- 7) additional
- 8) electrically