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# BBC LEARNING ENGLISH

## Lingohack 英语大破解

### Train of the future

### 未来的氢能火车

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#### 本集内容

Train of the future 未来的氢能火车

#### 学习要点

有关“power 动力”的词汇

#### 边看边答

How far can this train travel on a 15-minute fill-up of hydrogen?

#### 文字稿

It looks like the sort of standard diesel train you'd find on commuter lines and in rural areas that rail electrification hasn't reached.

这看起来是一辆普通的柴油火车，跟在通勤线路上和铁路电气化还未普及的农村地区的火车相比没什么两样。

But here in Germany, they've developed one of the world's first trains to run on **hydrogen** fuel cells.

但在德国，研究人员们已经开发了世界上第一批使用**氢**燃料电池驱动火车。

This is how it works. Hydrogen from an on-board tank goes to a fuel cell. That takes in oxygen from the air. And it creates a chemical reaction to make power.

原理是这样的：氢从车载燃料箱中被引入燃料电池，这一过程会从空气中吸收氧气，从而通过产生的化学反应来发电。

The first trains ran on **coal**, of course. That was filthy. Diesels still emit gases that harm people and heat the climate, unlike ultra-clean hydrogen.

众所周知，最早的火车是靠烧**煤**驱动行驶的。但这种方式很脏。柴油车仍然会排放危害人体健康和让气候变暖的废气，这与超清洁的氢气不同。

This is the emission from the exhaust. You can't smell it. I'm told you can't taste it. That's because it's water, pure water.

这是该火车的尾气排放物。它没有气味。我听说它也没有味道。这是因为排放物是水，纯水。

**Battery-powered** trains have been trialled in the UK and elsewhere as a substitute for overhead power lines. So what's the advantage for hydrogen?

以**电池为动力**的火车已在英国及其它地域试行，作为架空电缆的替代品。那么，使用氢的优势是什么呢？

**Mike Muldoon, Alstom Engineering**

We are using hydrogen because it gives us a better range for the train during the day than a battery would. Batteries take longer to charge and give us less energy through the day. So we would have to recharge them several times to provide the range that we can get with hydrogen.

麦克·莫尔顿 阿尔斯通公司

“我们使用氢燃料是因为它驱动火车比靠电池供电的火车在一天内行驶的距离更远。电池充电需要更长的时间，而且它全天的供能相对较少。所以我们得多次给电池充电才能达到氢燃料火车的行驶距离。”

One 15-minute hydrogen fill-up drives the train for more than 600 miles. What's more, hydrogen can be produced by surplus wind power.

一次十五分钟的充氢可驱动火车行驶六百余英里。更重要的是，剩余的风能可以产出氢气。

Hydrogen trains made here in Germany will go straight into service. The makers expect good business as governments round the world accept the need to cut emissions to protect the climate.

德国制造的氢动力火车将直接投入使用。由于世界各国都接受减少排放以保护气候的必要性，制造商们期望生意兴隆。

词汇

diesel 柴油

electrification 电气化

hydrogen 氢气

coal 煤

battery-powered 电池供能的

视频链接: <https://bbc.in/2yVEHlk>

你知道吗?

Shanghai Maglev is the fastest train in the world - with a maximum operating speed of 267.8 mph (431 km/h). Maglev is an abbreviation of 'magnetic levitation' – a system where trains run on a magnetic track rather than conventional rails.

上海磁浮列车是世界上行驶速度最快的火车，其最高运行速度可达每小时 267.8 英里（约 431 公里/时）。单词“maglev 磁悬浮”是“magnetic levitation 磁力悬浮”的缩写，指列车在磁力轨道而非传统铁路上行驶的系统。

问题答案

One 15-minute hydrogen fill-up drives the train for more than 600 miles.