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# ENERGY USE IN SCOTLAND

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# WHAT HAS BEEN DONE TO REDUCE ENERGY CONSUMPTION?

- ▶ Increasing education on energy usage in primary and secondary schools.
- ▶ Promotion and usage of eco friendly light bulbs.
- ▶ Recommended to take public transport or share rides or walk.
- ▶ Recycling bins put in place in all homes in Scotland as well as in communities, reducing energy out put to source new raw materials.
- ▶ 5p charge on plastic bags again reducing energy required to source raw materials.

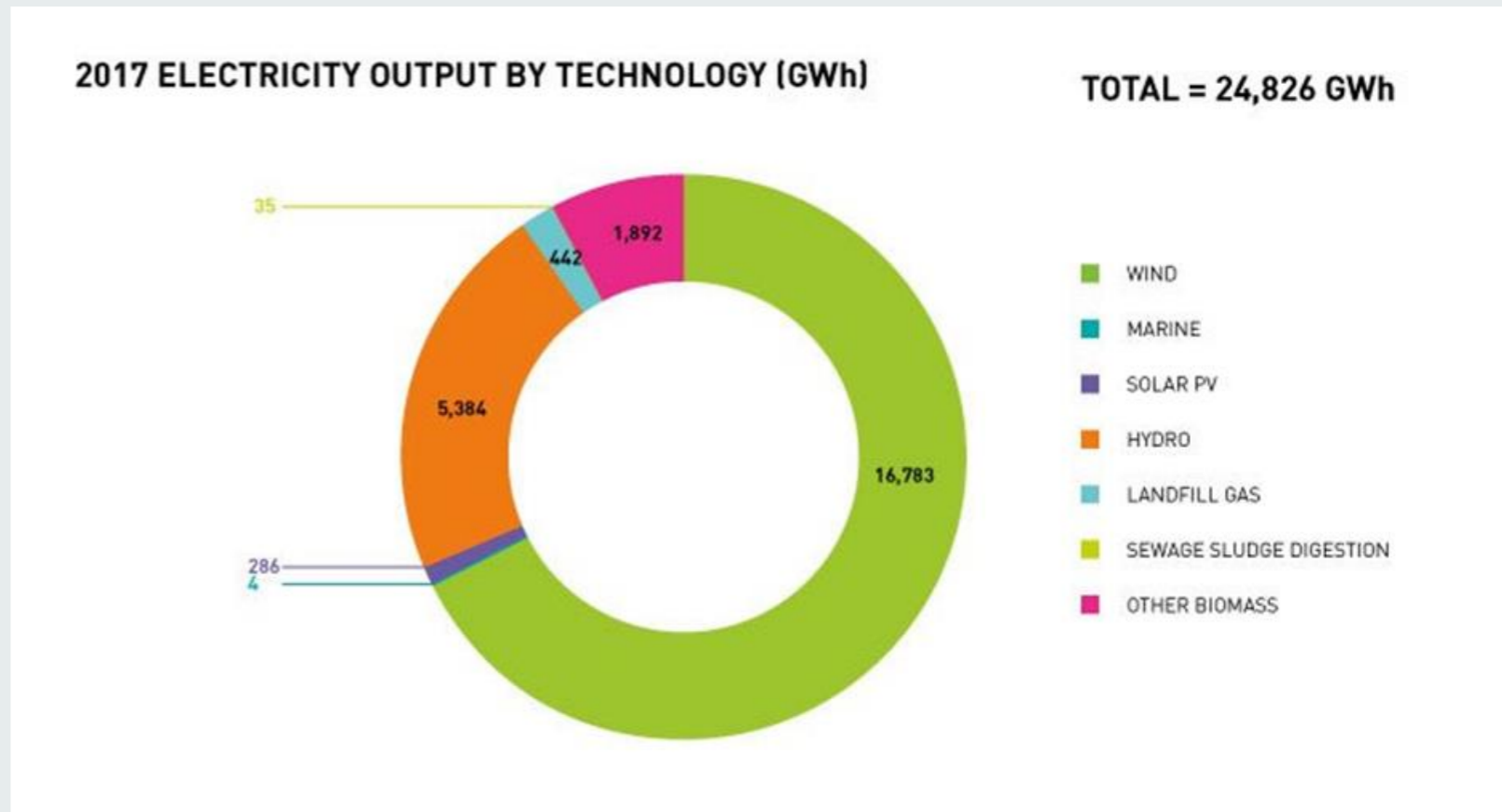
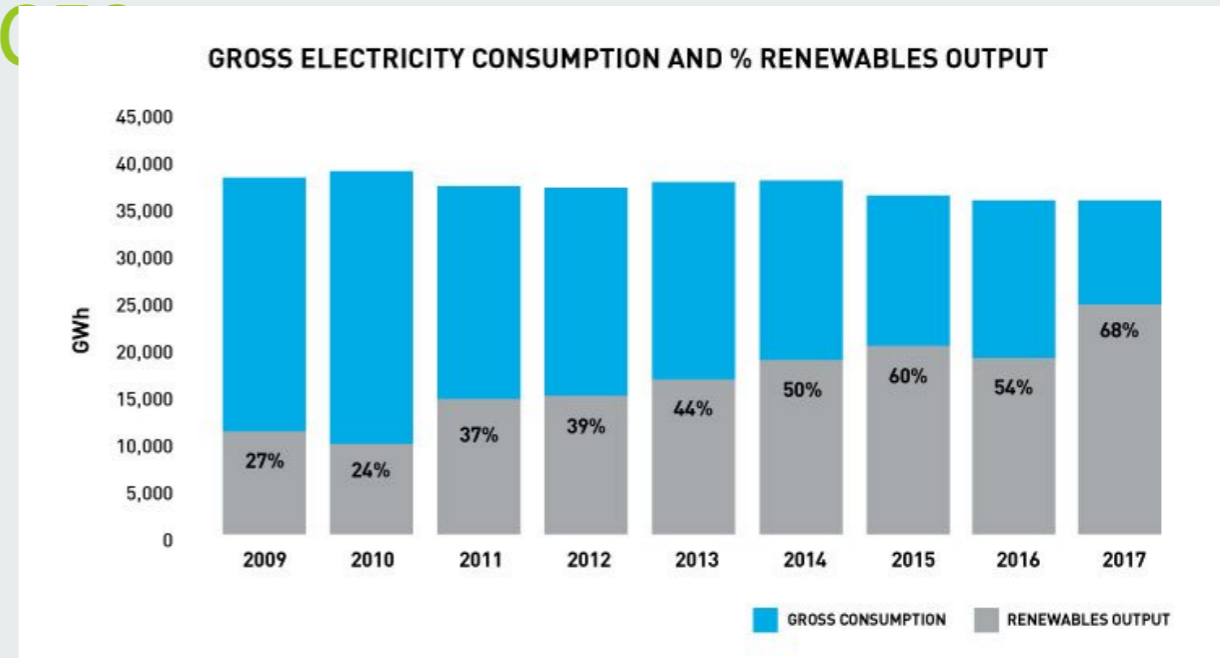
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## FUTURE DEVELOPMENTS IN SUSTAINABLE ENERGY IN SCOTLAND

- ▶ **By 2030 have 50% of energy for heat, transport and electricity supplied from sustainable sources.**
- ▶ **Completely decarbonise the energy system by 2050 and replacing it with renewable energy sources.**
- ▶ **In the next 10-15years Scotland aims to have eliminated all carbon based fuel in cars and replace them with electric cars**

# MAIN ALTERNATIVE ENERGY SOURCES IN SCOTLAND

- ▶ As of 2017 Scotland derived 68.1% of its electricity from Green Schemes
- ▶ Overall renewable energy use of 17.8%



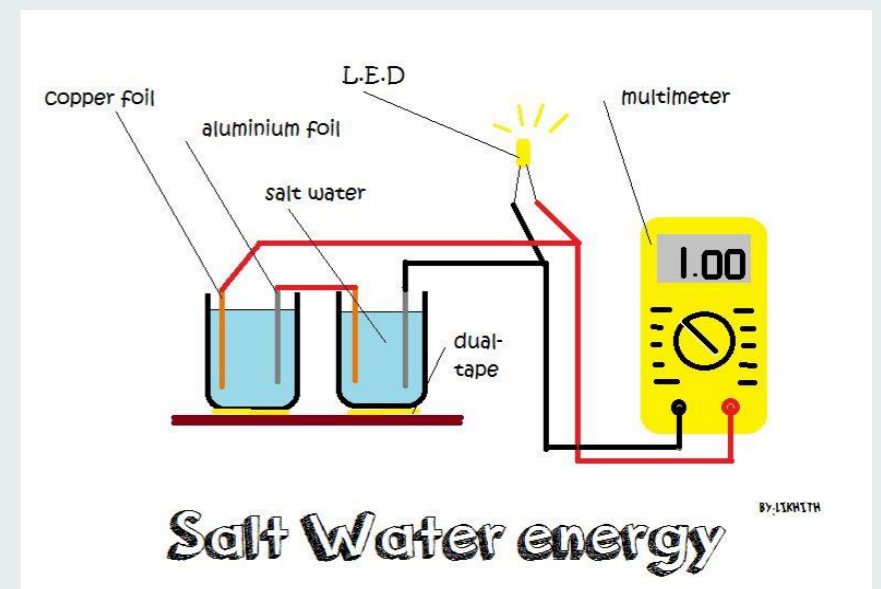
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## CHANGES IN THE PRODUCTION OF ELECTRICITY IN SCOTLAND OVER 50 YEARS

- ▶ In 2002 the electricity output from renewables was just 3%
- ▶ In the past there has been a strong coal industry progressing into a strong oil and gas industry
- ▶ Scottish Government aim for 100% renewable electricity output by 2020

## HOW SUSTAINABLE ENERGY IS TAUGHT IN PEEBLES HIGH SCHOOL

- ▶ **Annually** the whole school is asked how they get to and from school. It is conducted through a survey. Each survey goes towards the organisation of the “**walk to school week**”. This week encourages walking to school; pupils are dropped off a certain distance from school and walk the rest of the way. This **reduces CO2 gas and energy** wasted on unnecessary transport.
- ▶ Also, the science department make **greenhouses out of used plastic bottles**. This is an efficient and effective way of reducing the gasses used to break down the plastic bottles and reduce our carbon footprint.
- ▶ In the science department the chemistry classes learn about **water batteries**. A **salt water battery** employs a concentrated saline solution as its electrolyte. They are non-flammable and more easily recycled than batteries that employ toxic or flammable materials.
- ▶ The fact that they are easier to recycle makes them more efficient than normal batteries. In S3 (14yo) conduct an experiment that shows how salt water batteries work and the positives of using them.



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## HOW SCOTLAND IS REDUCING FOSSIL FUEL USAGE IN MOTORS

- ▶ -Sales of electric cars in Scotland have risen twice as fast in Scotland as opposed to the rest of the UK.
- ▶ - There are currently over 6,565 registered alternative fuel vehicles which is a 68% increase from 2016 where there was 3,897.
- ▶ -Scotland has 743 charging points for electric cars over the country – that's 1 for every 7,127 people.
- ▶ -Scotland was said to have some of the most well-developed publically-funded electric vehicle infrastructure and work is underway to make the A9 Scotland's first fully electric enabled highway.



# CHANGES IN DOMESTIC HEATING SYSTEMS

- ▶ In Edinburgh, solar PV generates 95% of the energy the same installation would generate in Birmingham. While in Glasgow, solar PV generates over 85% of the energy the same panels would produce in London.
- ▶ There is currently 188 MW2 of solar PV capacity in Scotland. This is enough solar PV to power the equivalent of 51,800 homes for a year.
- ▶ Parts of Scotland have similar solar irradiation levels to parts of Germany. Germany is one of the leading countries worldwide in terms of installed solar PV capacity.
- ▶ In 2010 and 2011, heat pumps were installed in Scotland, taking river water through sealed network of ammonia from a liquid to a gas which, through pressure, can heat water to 90 degrees. That water is then piped into people's homes to heat their radiators.
- ▶ This is a much greener, and cost effective way to heat homes rather than using coal fires, gas-powered boilers, oil, or electric storage units.

