



atlas
Reducing our carbon
Supporting the world

Using the Atlas Schools Toolkit A “How To” Guide for Demonstration Schools

1. About this guide

The Atlas Schools toolkit helps a school to measure its carbon footprint and identify actions that it can take to reduce its environmental impacts. This guide has been written to help demonstration site schools to use the toolkit.

The guide includes:

- An introduction to Atlas Schools
- An overview of the toolkit
- Step by step instructions on using the toolkit and interpreting the results
- A set of feedback questions that we would like all demonstration schools to answer; this feedback will help inform the further development of the toolkit
- Advice on what to do if you're stuck!

If you need help using the toolkit or interpreting the results, please contact Helen Spence-Jackson (helen.spence-jackson@cpsi.cam.ac.uk).

2. Introducing Atlas Schools

The Atlas Schools toolkit was created as part of a series of activities to help reduce the environmental impacts of schools across the EU.

These activities are coordinated through the EU Corporate Leaders Group on Climate Change. The Group is led by HRH Prince Charles, Prince of Wales, and facilitated by the Cambridge Programme for Sustainability Leadership. The organisations who have been involved in the development of this toolkit are:

- Arup
- First Solar
- Intel
- Kingfisher
- Philips
- Skanska
- Skai Group
- UTC

3. Introducing the toolkit

The Atlas Schools toolkit helps a school to:

- Measure its carbon footprint
- Understand how different activities of the school affect carbon emissions
- Identify easy actions that the school can take
- Track its carbon footprint over time

We currently have toolkits available for schools in Italy, the Netherlands, Poland and the UK. In the long term, we plan to develop the toolkit for all the countries in the EU – and perhaps further countries internationally.

4. Finding your way around the toolkit

Your school's carbon footprint is made up of three components: carbon emissions from energy use in the school; carbon emissions from travelling to and from school; and carbon emissions associated with the products and services that schools buy and use.

The toolkit asks you to provide information about your use of energy, how you travel and what your school purchases.

Once data for each of these components has been entered, your school can view its overall carbon footprint.

The toolkit then offers a list of actions that the school can take which will help to reduce its carbon emissions.

5. How does the toolkit work?

The toolkit asks you to input data on certain things: how much energy your school uses, how people travel to and from school, and how much you spend on different products and services.

Each of these pieces of data is then expressed in terms of its carbon emissions. So, a kilowatt hour of electricity equates to a certain number of kilos of carbon; a car journey of ten kilometres equates to a different amount of carbon; buying food for school lunches is another amount, and so forth.

The maths to make these calculations is actually very simple. Each activity – each type of energy, mode of transport or type of product – has a **carbon factor** associated with it. This is a figure which represents the amount of carbon dioxide emitted for every unit used or euro spent. The toolkit simply multiplies the number of units or amount of euros by that carbon factor to find out the individual carbon footprint of each activity.

6. Before you use the toolkit

Before starting to use the toolkit, you will need to gather a range of information and data together. You will need:

i. Information about how much energy your school uses

This can be in the form of:

- Meter readings, preferably monthly. These may be logged by the school already. Alternatively, data on energy consumption will be shown on your energy bills.
- Data on energy use that might be held for the school by the municipality or local authority

It would be ideal if a school could provide a year's worth of information. This will give you more informative charts to look at. However, a school can start to use the toolkit and create a carbon footprint with just one reading.

ii. Information about how pupils and staff travel to school

Some schools will have already carried out a travel survey or written a travel plan. For those that haven't, the process is:

- First, you need to know **how people travel**. On a given day, take a few minutes in each class to carry out a quick survey (you can use a sample of classes if it's too difficult to ask everybody). By a show of hands, work out how many children and staff travelled to school that day by car, bicycle, on foot, or using public transport.

- You'll also need to know **how far people travelled**. This might be an average figure for the whole school, or you could work it out for each mode of transport. You only need to know the distance for a one-way journey.

iii. Information about products and services that the school buys

Lastly, you will need to gather some information about certain products and services bought by the school over the previous year. This information should all be in the school accounts, but it may need the head teacher or a finance manager to find it for you.

The toolkit lists some categories of products and services that are commonly bought by schools, and you should try to match up with this as far as possible. The categories are:

- Food and drink
- Services (such as printing, banking and insurance)
- Furniture, glass and crockery
- Clothing
- Consumables (such as paper, paints, inks and cleaning products)
- Technology (such as computing equipment)
- Construction

There are further smaller categories within each of these in the toolkit (check the Procurement tab for the full list).

7. Using the toolkit

i. Introduction

The Introduction page welcomes you to the toolkit and gives some insights into how it works.

The red box labelled Guidance appears on the top left of each page, and gives tips on how to fill in each section; simply hover your mouse over the red box to see what it says.

You can move from screen to screen by using the dark blue navigation buttons down the left hand side of the page, or by using the tabs at the foot of the screen. The navigation button for the page you are on shows up in green, so you don't get lost!

The input boxes on each page are coloured pale yellow; these are where you input information.

Other figures are provided to show you some of the background calculations: students might find it interesting to look at these numbers and analyse them or produce charts.

Data that has been input stays in the toolkit as you move from screen to screen, but it's worth saving as you go. Keep a blank copy of the toolkit in case you find you need to start again!

ii. General data

This screen is for the school to record its general information. The input boxes are either free text or have drop-down menus from which you can select an answer (click inside the blue box, towards the right; this will bring up the drop-down menu if there is one).

iii. Energy

We now move into a series of screens which capture information about your school's use of energy.

Heating

There are several input screens related to heating, based on the type of fuel that the school uses. Natural gas is probably the most common fuel, but some schools will use heating oil or LPG.

For each heating fuel that your school uses, choose the relevant sheet and fill in the columns headed Date, Meter Reading and Cost (usually per kWh or litre of fuel) for as many different months or periods as you have. You'll see that the other boxes fill in automatically as you go along.

If your school uses wood fuel, you can input details onto the Biomass sheet. At the top of the sheet, you can select the type of wood fuel that you use (chips, pellets, logs).

If the school uses more than one heating fuel, fill in as many of the sheets as are appropriate.

Heating results

The heating results sheet shows you the total carbon footprint associated with how the school is heated (in the blue box at the top of the page).

It also produces graphs based on the information provided for each heating fuel and for the total heating carbon footprint (see *What do my results mean?* below for more).

Electricity

The process is very similar for electricity: simply fill in the date, the meter reading and the cost per unit of electricity in the pale yellow columns.

At the top of the sheet, there is a box called Electricity Emissions. This is set to the average emissions associated with the production of electricity in each country. If you use a green electricity tariff, you can change this amount to show the emissions associated with that tariff. Bear in mind that not all green tariffs are zero carbon; check with your supplier if you are not sure.

There is also a sheet called Renewable Energy. This captures any renewable electricity generation on site at the school, for example, solar PV panels. Again, for each period (eg, month), input the date and the amount of electricity generated (in kilowatt hours). You can also input the amount of revenue that you receive for any electricity generated or imported.

Electricity results

The electricity results page shows the total carbon footprint of electricity use (in the blue box at the top).

It also shows three charts: the chart of average daily CO₂ emissions associated with the use of electricity, the carbon saved by using onsite renewable energy and, lastly, the net CO₂ emissions (ie, grid emissions minus electricity generated from renewable energy).

iv. Travel and transport

To work out the travel footprint, you will need to capture: the number of pupils and staff travelling by each mode of transport, and the typical distance travelled to and from school.

Start with the **transport overview** sheet. In the Pupils & Staff column (yellow boxes), simply type the number of pupils and staff travelling by each mode of transport. The spreadsheet will then generate a chart showing you the % split of journeys by different modes.

There are two approaches to working out distance travelled using the sheets called Walking & Cycling; Public Transport; Passenger Car and Passenger Car Share. You can either capture data separately or you can use the toolkit to help you. Here's an example:

Open the Walking & Cycling sheet. Your options are:

- Option A: add in an entry for each individual pupil or staff member who walks. You can log their name, the start and end points of their journey (the end point will be the location of the school!). Use the drop down menu to select whether they walk or cycle and then type in the distance of their journey to school. **Note this is only the one way journey**; the spreadsheet will calculate the return trip!
- Option B: if you already know the average distance travelled by those who walk and by those who cycle, you can just use one row of the table for each mode (rather than a row per person). So the first row would be walking, you would select Walk from the drop down menu and then type in the average miles or kilometres travelled based on calculations you have made elsewhere.

You need to repeat this process for the Public Transport, Passenger Car and Passenger Car Share worksheets. You'll see that there are different options in the drop-down menus (eg, size of car, whether it uses petrol or diesel).

At the bottom of each of these sheets, you'll see a small table, which shows the total and average distances travelled for return journeys and the CO2 emissions associated with each mode of transport.

Transport results

This sheet draws the data on how people travel from the Travel Overview, and the different average distances from the survey sheets. It will complete automatically. It gives a total carbon footprint for travel, along with some pie charts and data tables which can be analysed by the school.

v. Procurement

Procurement is the easiest section to fill in, once you've got hold of the right financial information.

Simply fill in the annual spend column for each category of product or service. If you only have highly aggregated data (eg, all consumables together), then make a judgement on where the majority of money was spent and allocate it into the appropriate row.

The **Procurement Results** sheet completes automatically giving you a summary table and a pie chart showing the carbon footprint from the products and services bought by the school.

vi. Carbon footprint

And now for the results!

The Carbon Footprint sheet brings together all the components of the footprint into one table and a number of charts.

It shows carbon emissions for the whole school in tonnes.

It also shows carbon emissions per pupil (in kilograms).

The UK version of the toolkit offers a comparison on this page between the school and other similar schools in the same area.

vii. Options

The Options sheet shows a standard set of actions that your school could take to reduce its carbon footprint. These have been split into easy, low-cost actions at the top, and longer-term actions below. You can select which of these actions you will commit to taking by marking an X in the right hand column.

viii. Action Plan

The options selected feed into an action plan, where the school can read more detail about the actions they wish to take, and where details of potential carbon and cost savings are shown.

8. What do my results mean?

i. Interpreting your heating and electricity charts

The heating results charts show how the school's use of heating fuel and electricity vary over time (ie, over the school year).

You should expect to see clear seasonal patterns in the use of energy. Heating energy will go up in the winter because temperatures are colder. Electricity should also go up in the winter as shorter days mean that lights are on more often. There should also be clear dips in use during school holiday periods.

ii. Interpreting your travel footprint

The tables and pie charts show you how people travel to school and the carbon emissions from each mode. The more people travel by passenger car, the higher the carbon emissions will be. Some people have to travel by car: they have special transport needs or live a long distance away in a rural community. You would be surprised, however, by the number of pupils and staff who live close to school but still travel by car.

There is very little information available about school travel patterns across the EU, so every data set that we get through the Atlas Schools toolkit will be very helpful in finding out how children and young people travel. This is helpful not only for reducing carbon emissions, but also for helping children to keep active and healthy by encouraging walking and cycling where possible.

iii. Interpreting your procurement footprint

There are probably one or two categories of product or service that dominate your procurement footprint.

It can be very enlightening to talk with a group of students and get their ideas on what the environmental impacts of a product or service might be, and what can be done to reduce them. You can track something like food back to its basic ingredients and think about the energy and water inputs that go into growing, harvesting, processing, freezing, distributing and cooking. It can be really eye-opening!

You should also think about which elements of your procurement footprint are recurring and which are one-offs. For example, purchases of paper are likely to be recurring, but large construction projects will only happen once every few years. Thinking in this way will help you understand why your procurement footprint changes over time.

iv. Understanding your carbon footprint

The charts on the Carbon Footprint page show total carbon emissions and per pupil carbon emissions for the school.

There are many factors which influence a school's carbon footprint. If a school has specialist facilities which use a lot of energy, this will push the footprint up; this could be a swimming pool, a drama studio or hothouses for growing food.

If a school is in a rural location and there are no school buses, this could push the travel footprint up, because more pupils and staff have to travel by car.

And if the school has recently undergone a big change – for example, construction of a new block of classrooms – this will push the carbon footprint up.

Most EU countries do not yet have benchmarks for carbon emissions for schools or per pupil. We would like to encourage schools using the Atlas toolkit to share their carbon footprint with us and with other schools, so that we can find out more about carbon emissions from schools across Europe.

10. Help

If you need help using the toolkit or interpreting the results, please contact Helen Spence-Jackson (helen.spence-jackson@cpsl.cam.ac.uk).