



# Creating a Trust Energy Strategy & Managing Rising Energy Costs



# Agenda

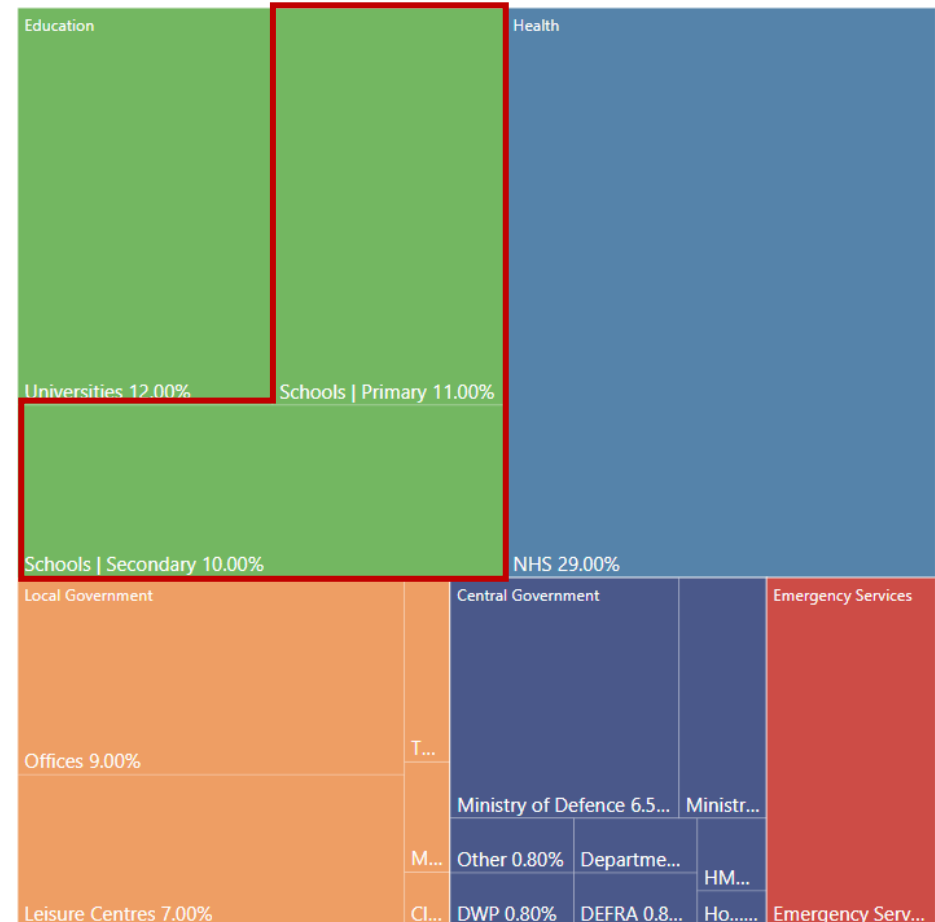
- ☑ Why you need an energy strategy
- ☑ Creating your Energy Strategy
- ☑ Managing rising energy costs
- ☑ Trust Journey – Greenshaw Learning Trust
- ☑ Next Steps
- ☑ Questions


# Benefits of energy transformation

- ✔ Substantially reduce your long-term energy costs
- ✔ Mitigate impact of volatile energy market
- ✔ Generate your own power
- ✔ Starts your journey to net zero carbon emissions
- ✔ Starts the journey to a Climate Action Plan
- ✔ Engage learners in sustainability
- ✔ Raise the profile of your organisation
- ✔ Leaves a legacy for the community you serve

# Clean Growth Strategy

- Government Policy outlines an ambition to reduce public sector emissions by 78 % by 2035 compared to 1990 levels and Net Zero by 2050
- This is a significant challenge and education, as the largest energy user in the public sector, has a key role to play in this.
- Academies alone equate to over 10% of the Public Sector Carbon Footprint

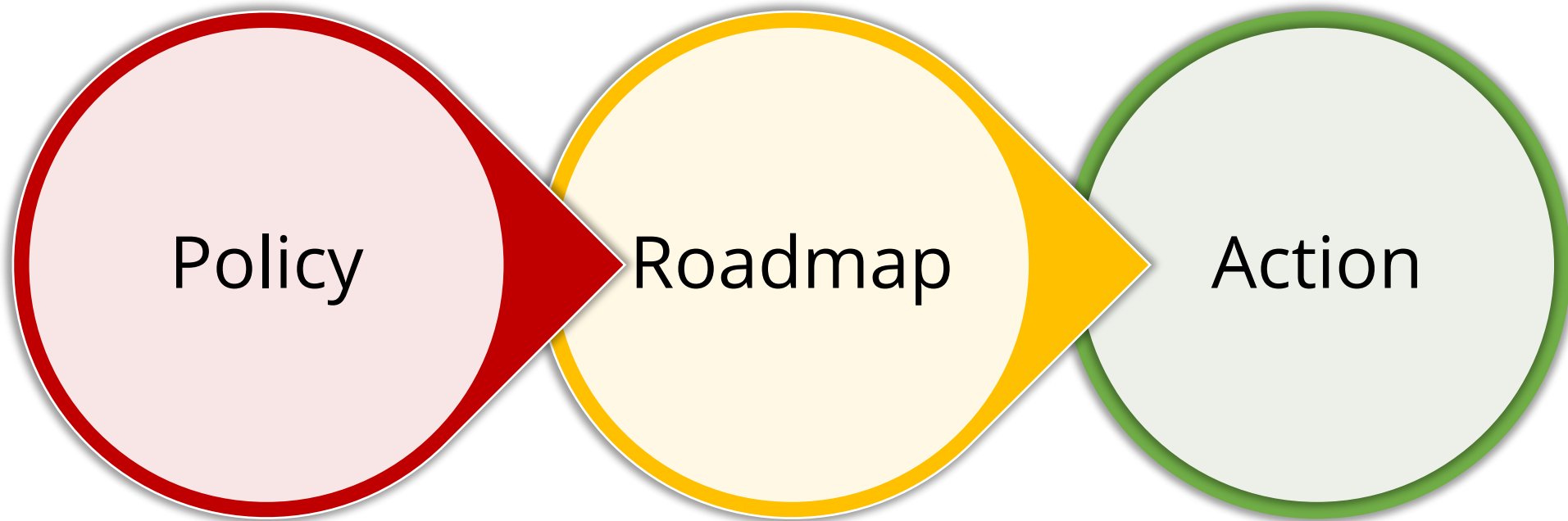


The background of the slide is a scenic landscape. On the right, a steep, forested mountain slope descends towards a winding asphalt road that curves along the edge of a deep valley. To the left of the road is a calm, dark blue lake. In the distance, rolling green hills and mountains are visible under a bright blue sky filled with large, white, fluffy clouds. The overall scene conveys a sense of a long, scenic journey.

# Creating your Energy Strategy. It's a journey, not a destination

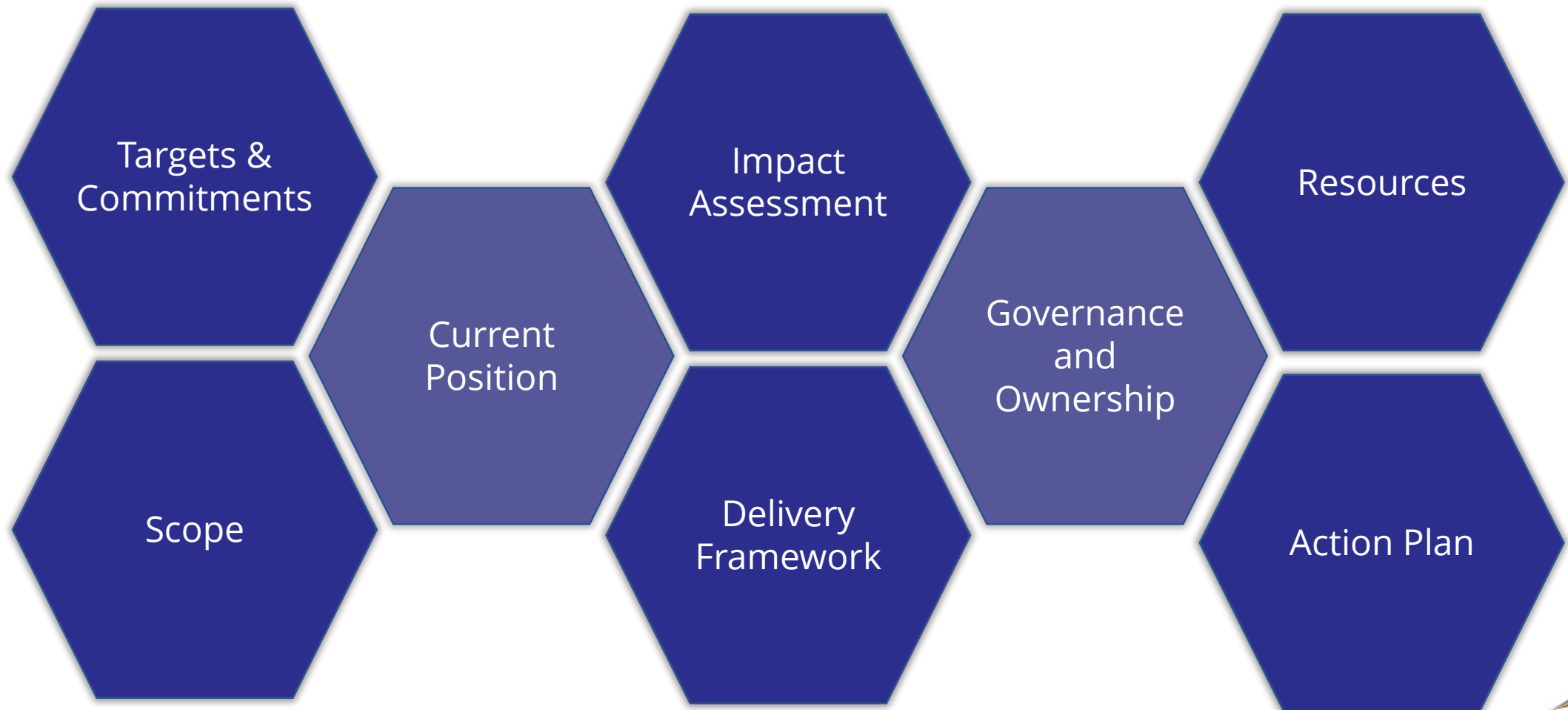
# Transforming Energy Management

Barker





# Creating your Energy Policy



# Transforming Energy Management

## 10 Year Decarbonisation Roadmap

### Decarbonisation Roadmap

Strategy

Executive Summary

Methodology

Targets

### Key Data

Energy Benchmarks

SECR Data

Electricity Price Inflation

Gas Price Inflation

### Evidence

Photovoltaic Investment

Photovoltaics Design

Energy Audit Report

M&E Plant Data

Energy Audit Raw Data

DEC Data

### Decarbonisation Roadmap Contents

Building Inventory

The building inventory provides an overview of the size and make up of the Trust estate and details the age of each building, construction type its size and operational hours as well as detail on its location and surroundings

Agreed Supply Capacity

Overview of the Current Agreed Supply capacity along with details of Forecast Capacity Requirements and actions to reduce demand

Energy Use

Provide an insight into the Trust energy consumption data for the trust and how it is evidenced in the our the Display Energy Certificates and SECR reports

Heating Systems

Condition Data on the Current Heating System as well as an overview of the key elements which make up the system

Project Matrix

Provides an insight into our ten year investment programme as well as detailing progress to date the matrix focuses on the investment in 10 key areas but also looks at maintenance cost and EV charging

Hot Water

Details on the hot water infrastructure within each building

Challenges

Details the Governance process for the trust as well as defining solution to the challenges the trust faces in delivering its decarbonisation strategy

Project Governance

Insight into the Trust Project Delivery and Governance Process

Planning

Address the planning issues each academy within the trust needs to consider when developing its decarbonisation plan

Complete Projects

To date we have made a substantial investment in our estates this dashboard captures the cost as well as forecast carbon savings





# Transforming Energy Management Project Matrix

Cost

Carbon

Consumption

Academy	01   Data	02   Renewables	03   Lighting	04   Equipment	05   Fans & Motors	06   Controls	07   Building Fabric	08   Hot Water	09   Electric Heating	10   Heating Other	11   Maintenance	12   EV Charging	Total
Bandon Hill Primary School	£1,000	£63,750	£141,980		£1,410	£26,000	£39,103		£84,000				£357,243
Broadwater School	£2,000	£143,217	£96,241	£26,000		£40,080			£260,000			£19,453	£586,991
Crown Wood Primary School	£1,000	£45,365	£43,414	£13,000		£22,000	£13,000	£4,000	£232,500	£42,500		£18,250	£435,029
Five Acres High School	£2,000	£74,468	£135,948	£26,000	£1,580	£27,800	£32,300					£18,789	£318,885
Gloucester Academy	£2,000	£151,905	£165,252	£27,600		£800						£21,511	£369,068
Green Wrythe Primary School	£1,000	£45,748	£56,669	£13,000		£22,000						£25,553	£163,970
Greenshaw High School	£2,000	£106,997	£201,058	£26,000	£40,000	£30,000	£200,000	£6,000	£1,660,000	£400,000		£29,265	£2,701,320
Henley Bank High School	£2,000	£110,013	£140,928	£46,000	£3,660	£26,000	£60,700	£7,000	£48,000	£200,000	£4,800	£21,423	£670,524
Holmleigh Park High School	£2,000	£217,816	£160,600	£26,000	£4,390	£26,000	£347,170	£23,125	£230,800	£111,000		£35,273	£1,184,173
Montpellier Primary School	£1,000		£35,257	£13,000	£545	£22,000	£122,192	£7,490	£1,110,780			£24,914	£1,337,178
Orchard Park High	£2,000	£111,437	£168,809	£26,000		£61,000		£65,000	£1,255,000	£407,000		£20,651	£2,116,897
Scott Medical and Healthcare College	£2,000	£0		£26,000	£200	£26,000		£11,470					£65,670
Stoke Damerel Community College	£2,000	£130,000	£165,203	£26,000	£2,640	£31,000	£41,200	£20,230				£21,581	£439,854
The Brakenhale School	£2,000	£148,233	£38,356	£26,000	£1,200	£26,000	£181,000	£7,100	£641,300	£119,500		£32,292	£1,222,981
Tweeddale Primary School	£1,000	£24,217	£51,310	£13,000		£22,000	£567,000		£490,000	£110,000		£21,026	£1,299,553
Tyndale Primary School	£1,000	£38,198	£38,216	£13,000	£3,080	£22,540	£22,350	£9,800	£224,000			£17,356	£389,540
Victor Seymour Infants' School	£1,000	£19,196	£30,749	£13,000		£22,000	£27,000	£4,500	£255,000	£65,000		£17,848	£455,293
Wildmoor Heath School	£1,000	£20,750	£22,552	£13,000		£22,000	£7,100	£3,000	£193,500	£37,000		£7,939	£327,841
Woodlands Primary School	£1,000	£36,221	£44,774	£13,000	£7,880	£22,721	£8,866		£207,150			£14,699	£356,311
Yate Academy	£2,000	£116,046	£145,662	£26,000	£480	£1,500	£800		£34,000		£7,000	£25,000	£358,488
Total	£31,000	£1,603,577	£1,882,978	£411,600	£67,065	£499,441	£1,669,780	£168,715	£6,926,030	£1,492,000	£11,800	£392,823	£15,156,809



Academy

All

Project Category

All

Technology | Work Type

All

Project Status

01 | Complete

02 | Tendered

04 | Potential

Total Project Value

£15,156,809

Note | the cost of the works complete are actual cost and the works surveys are pre tender estimates and do not allow for any asbestos costs



# Managing rising energy costs

Do Nothing

Switch it off

Invest for  
the future



# Energy Price Inflation

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## Electricity

1p increase = £4.1 million

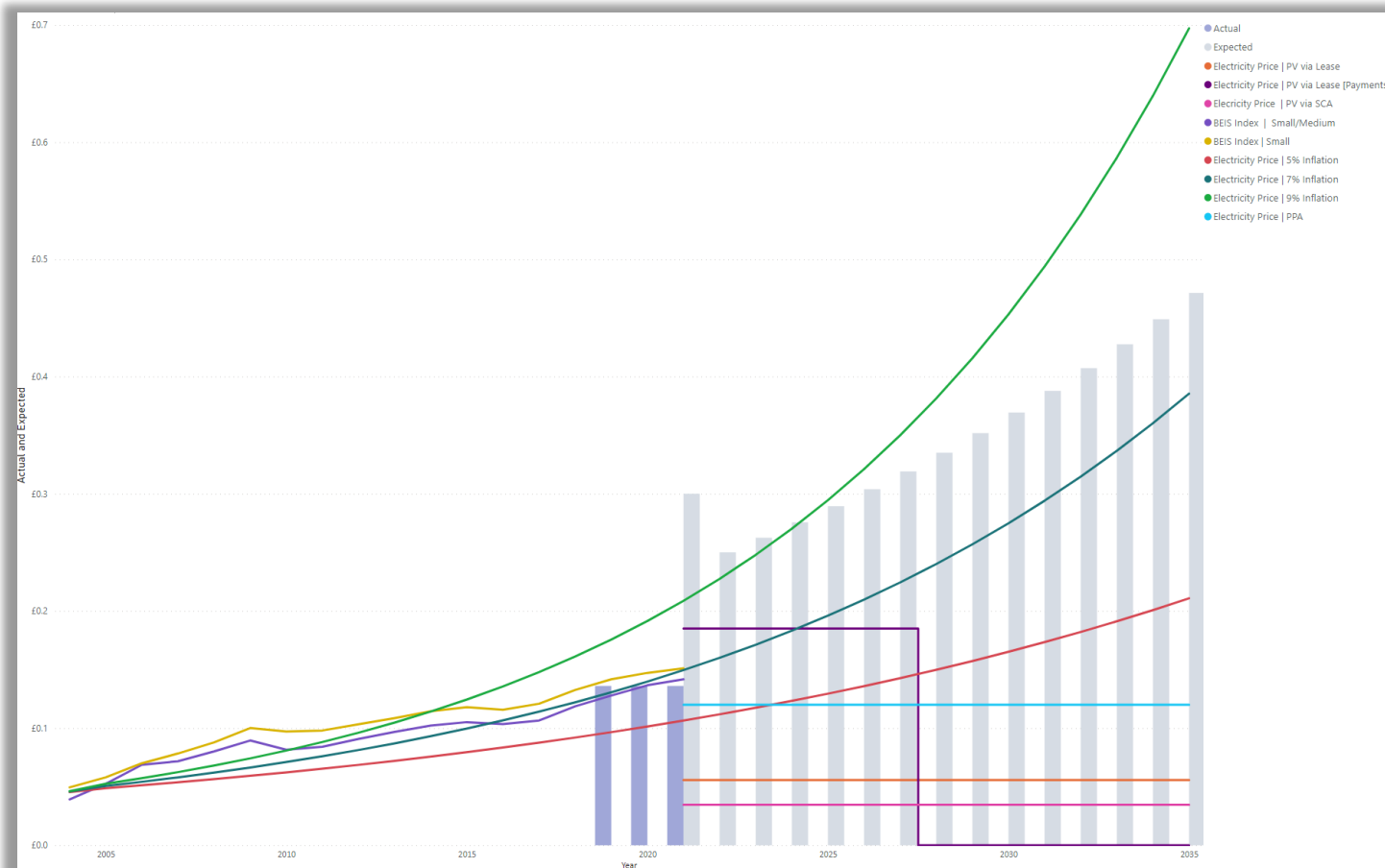
or 124 x new qualified teachers



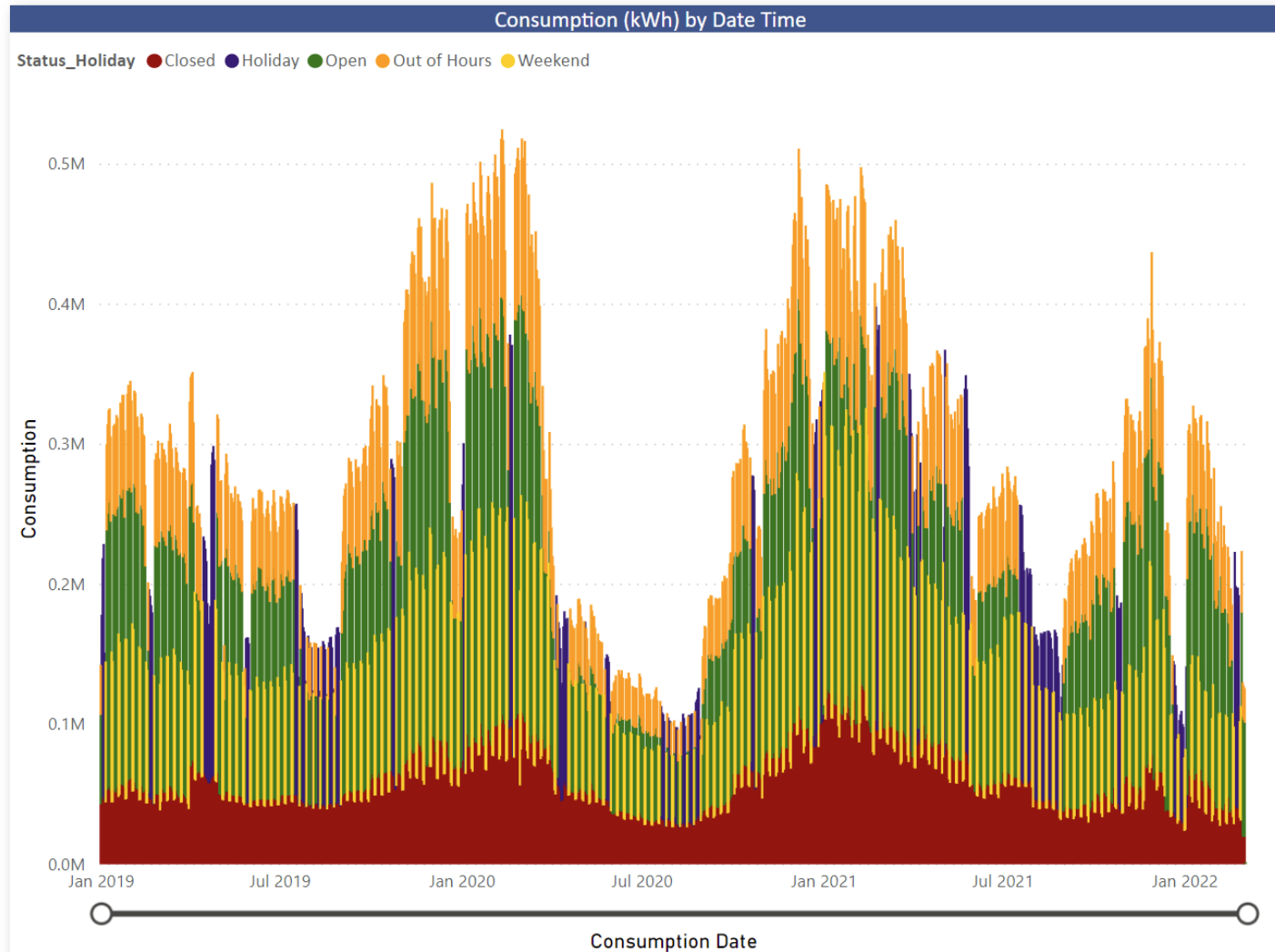
## Gas

1p increase = £9 million

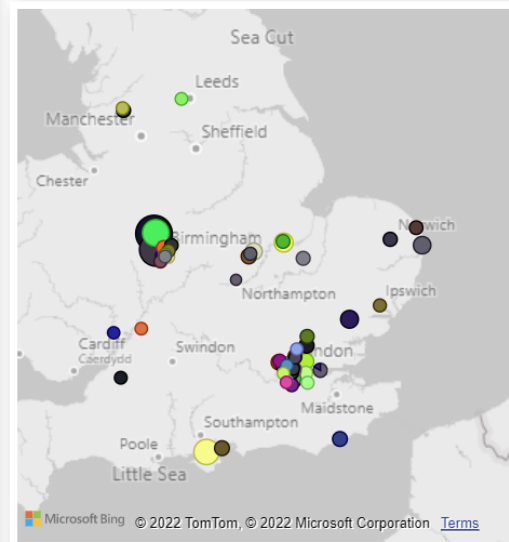
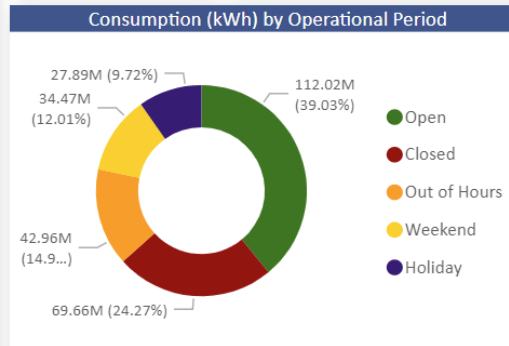
or 274 x new qualified teachers



# Consumption Patterns

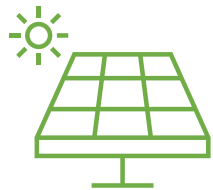


Total Academies	Consumption (kWh)
321	287,000,813





# Invest in the future

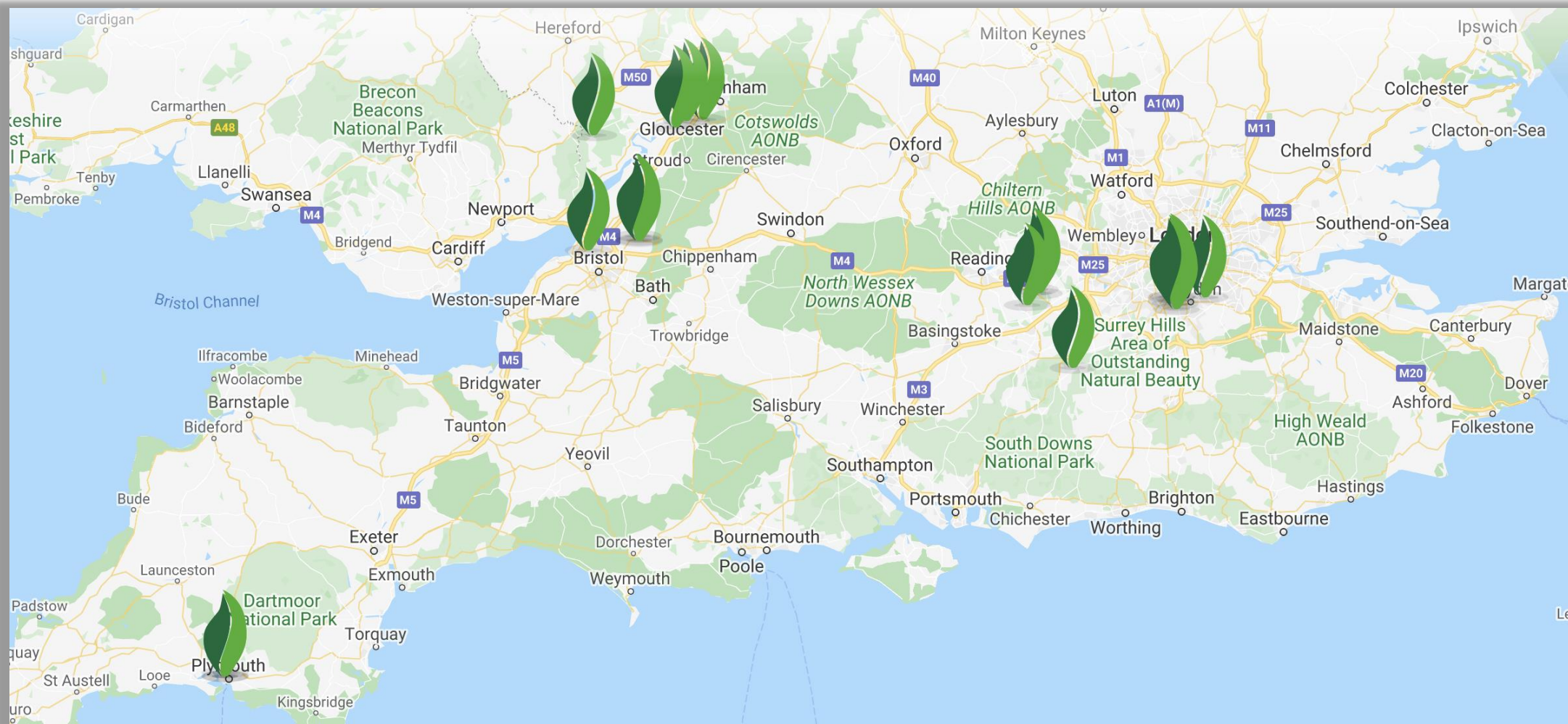


**Photovoltaics** | based on the electricity price being fixed at 28p over the next 25 years every £100,000 invested in photovoltaics will deliver £625,000 of return and will deliver electricity at a fixed price of around 5p per kWh over the next 25 years.



**LED Lighting** | based on the electricity price being fixed at 28p over the next 10 years every £100,000 invested in LED Lighting will deliver a £186,000 of return and will deliver electricity at a fixed price of around 15p per kWh over the next 10 years.

**Barker**





# 2020 Energy Strategy

protect the  
trust finances  
from the  
vagaries of  
the energy  
market

**Reduce Grid Demand** | Electricity prices are forecast to increase by at least 3-5% per annum over next 10 years. The main effort therefore was to investigate and implement a strategy that reduced the overall grid consumption for the Trust.

Investing in LED lamp replacement reduces consumption by at least 20% and installing Solar PV solution buys up to 20% of an academy's electricity at a fixed price for 25 years

invest  
energy  
savings into  
the lives of  
students

**Private Sector Funding** | utilising private sector funding will allow the trust to compete the works by the summer of 2021 and the savings will generate £9 million of additional resources for the education of children.

These technologies enables the generation of a surplus for the school to use to improve the life chances of some of the poorest in our communities but also significantly reduces the carbon footprint of schools. LED lights also transform the learning environment.

use data to  
help reduce  
carbon  
emission by  
50% by  
2030

**Data is the new gold** | utilising the data from smart meters will help trust realises the savings and monitor to ensure savings from LED lighting and PV panels are not lost through complacency.

Successful deployment of LED and PV Panels will reduce an academies carbon footprint by over 40% well in advance of the governments 2030 target

# 2020 Energy Strategy

## Planned

Install  
1,800kWp of  
Solar Panels

Generating  
36,740 MW  
over 25 years  
at 4.9p/kWh

Install over  
11,000 new  
lights

Forecast  
savings over  
warranted  
life £9 million

## Delivered

Installed  
1,766kWp of  
Solar Panels  
& 300kWp  
planned

Over 200  
tonnes CO<sub>2</sub>e  
saved in 12  
months

Installed over  
15,000 new  
lights

Protected  
against £10  
million of  
energy price  
increase



# Continuing our journey



**photovoltaics** | we have 3 academies to complete



**controls** | we are looking at the operational profile of each academy to understand what is driving the out of hours consumption



**temperature** | review boilers, heaters and air conditioning settings as well as the use of temporary heating ensuring we are ready for the next round of PSDS



**IT** | review of the impact of IT equipment on our energy consumption patterns reviewing server rooms and hub rooms to ensure are no colder than 24°C as well as considering the potential for cloud computing reducing our carbon footprint

# Next steps

**Understand  
your Data**

**Controls  
Review**

**Renewable  
Energy**

**LED Lighting**

**Understand  
your energy  
Contract**

**Develop a  
Policy**

**Energy  
Audits**

**Be PSDS Bid  
Ready**

# Contacts



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