



Sheringham Shoal
Operated by Statkraft



North Norfolk Infant and Primary School Energy Saving Programme

Results based on work carried out by Energy Rescuers in conjunction with Norfolk County Council with reception and Key Stage 1 children

80% funded by Sheringham Shoal Community Fund with a grant to 'Friends of Holt Hall'.

Programme Developed and Delivered by;

Sara and Brooke Paige (Energy Rescuers) saragpayge@ymail.com

Evaluation Report Produced by;

Susan Falch-Lovesey (Head of Environmental and Outdoor Learning)

susan.falch-lovesey@norfolk.gov.uk and Secretary Friends of Holt Hall susanfalch@btinternet.com



Friends of Holt Hall

FoHH Reg Charity 1151613
Holt Hall, Kelling Road, Holt, NR25 6RT

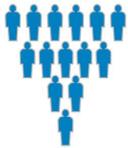
Energy Rescuers North Norfolk Sheringham Shoal Evaluation



Number of North Norfolk schools delivered to in the last 6 months.



% of North Norfolk Schools reached by ENERGY RESCUERS.



3112 primary children taught in North Norfolk (Sept 15 – March 16).

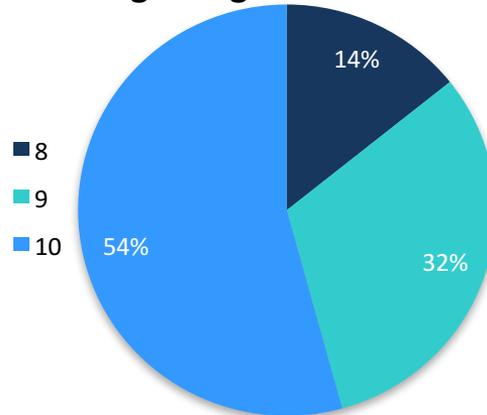


Average amount of money saved per year in participating primary schools.

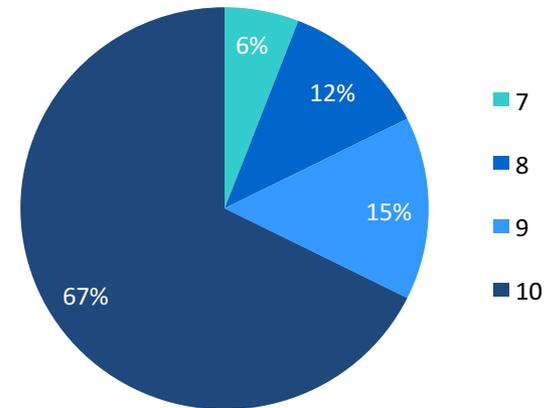


Average Payback time for the programme cost to be covered by energy savings.

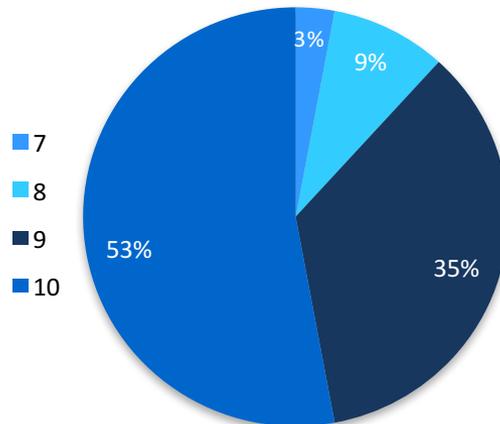
Were the main objectives of the programme made clear at the beginning of the session? (/10)



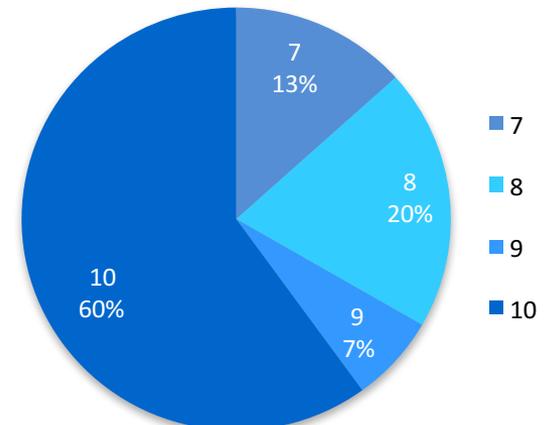
How well did the children stay engaged throughout the workshop? (/10)



How well was new vocabulary introduced and explained in a way that was accessible to all students?



Impact of energy saving message, based on evidence of later energy saving behaviours (/10)



Energy Rescuers Electricity Data Analysis – over 6 month period

Electricity - 6 month Comparison (2014/5 comp. to 2015/16) inc. Accrual

(ALL PRIMARY SCHOOLS)

| | date | current | previous | diff | % diff |
|--|--------------|-------------------|-------------------|----------------|-------------|
| | Oct | 1,625,341 | 1,520,079 | 105,262 | 6.92 |
| | Nov | 1,790,057 | 1,724,418 | 65,639 | 3.81 |
| | Dec | 1,785,378 | 1,858,547 | -73,169 | -3.94 |
| | Jan | 1,975,630 | 2,018,064 | -42,434 | -2.10 |
| | Feb | 1,833,155 | 1,783,759 | 49,396 | 2.77 |
| | Mar | 1,883,205 | 1,839,450 | 43,755 | 2.38 |
| | Total | 10,892,766 | 10,744,317 | 148,449 | 1.38 |

Electricity - 6 month Comparison (2014/5 comp. to 2015/16) inc. Accrual

(NORTH NORFOLK PRIMARY SCHOOLS)

| | date | current | previous | diff | % diff |
|--|--------------|----------------|----------------|----------------|--------------|
| | Oct | 124,973 | 119,424 | 5,549 | 4.65 |
| | Nov | 133,874 | 133,168 | 706 | 0.53 |
| | Dec | 144,650 | 149,727 | -5,077 | -3.39 |
| | Jan | 148,788 | 159,753 | -10,965 | -6.86 |
| | Feb | 140,401 | 143,471 | -3,070 | -2.14 |
| | Mar | 143,654 | 145,376 | -1,722 | -1.18 |
| | Total | 836,340 | 850,919 | -14,579 | -1.71 |

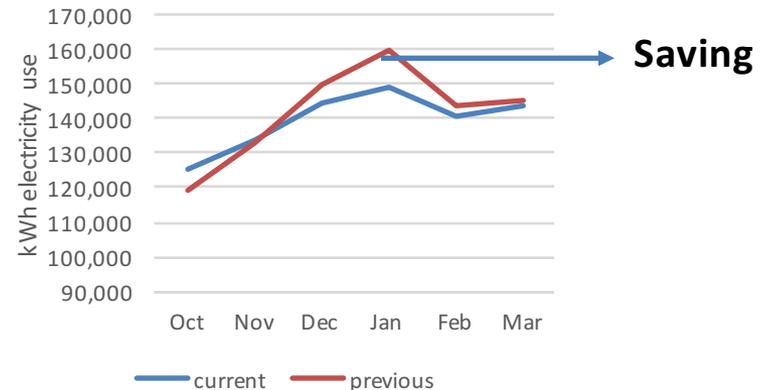
*Compared to all Norfolk Primary Schools, North Norfolk Schools have made an average reduction in electricity consumption of **3% (3.09%)**

*The actual cost saving for N. Norfolk schools over 6 months was **£1,602** (14,579 kWh x 11p)

*If compared to the increased trend for all Norfolk schools, the saving amounts to **£2,900 (6 months)**

*This represents a 3 year financial payback for the whole programme, and a **2.4 year payback** on grant funding – when considering electricity savings of 6 months only

Electricity Use in kWh - North Norfolk Schools



Energy Rescuers Data Analysis cont..

*Heating (weather corrected) shows an average yearly, weather corrected reduction in kWh for North Norfolk schools of **2.85%**. At 3p/kWh, this equates to an average saving of **£75** per school or **£2,600** in total across all the N. Norfolk Schools for the whole year. This is the value of the energy saved due to reduced consumption and the value used for payback calculations below.

* With both heating and electricity cost reductions considered (**£5,500**), the payback period would be improved (reduced) to **1.3 yrs** (on grant funding) or **1.6 yrs** (total cost). This figure only uses the electrical saving for half a year, so it is an underestimation. As an approximation, if the electrical savings sustained in 6 months (Oct-March) were achieved through a whole year, the total savings per year become;

$£2,900 \times 2 + £2,600 = \mathbf{£8,400 \text{ total or } £240 \text{ per school}}$, with the actual cost of the programme being **£250 per school**



**The payback for the programme is marginally over 1 year
(when considering both heating and electricity)**



*The financial outcome above does not include social return on investment for learning outcomes, nor environmental benefits – both considerable and evidenced spin-offs from the programme.

*The figures also mask a huge difference in impact on energy use/saving between schools and this is almost certainly the most important learning point. A number of case studies show what can be achieved with a really committed, whole school approach. Please see the recommendations on slide 8.

Energy Rescuers Data Analysis, a note on Heating...

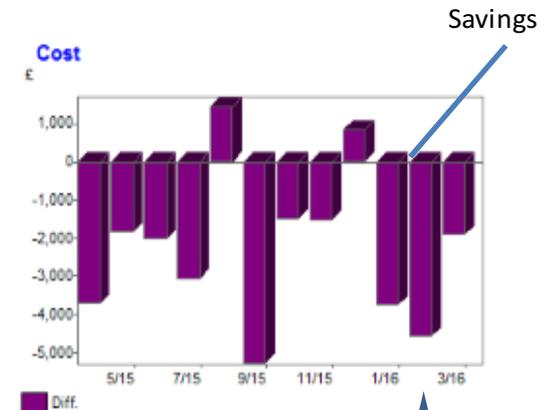
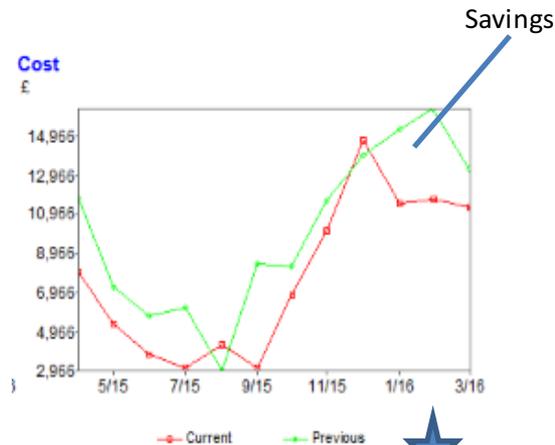
It is interesting to note that the actual cost of heating reduced by **22.4% over the year**.

Most significant financial reductions in January (-24%) and February (-28%), coinciding with actual kWh energy reductions of nearly 10%.

The combined impact resulted in an actual cost reduction of **£775** per school over the year.

A good deal of this financial reduction was due to lower energy costs - something we may not be fortunate enough to see in the future and which may influence the payback of the programme in a positive way (as prices rise).

| Cost | | | | |
|--------------|---------------|----------------|----------------|---------------|
| Date | Current | Previous | Diff. | % Diff. |
| Apr | 8,029 | 11,776 | -3,747 | -31.82 |
| May | 5,335 | 7,212 | -1,878 | -26.04 |
| Jun | 3,789 | 5,830 | -2,041 | -35.01 |
| Jul | 3,115 | 6,202 | -3,087 | -49.78 |
| Aug | 4,366 | 2,966 | 1,400 | 47.19 |
| Sep | 3,138 | 8,430 | -5,291 | -62.77 |
| Oct | 6,799 | 8,306 | -1,508 | -18.15 |
| Nov | 10,116 | 11,686 | -1,569 | -13.43 |
| Dec | 14,765 | 13,956 | 809 | 5.80 |
| Jan | 11,556 | 15,322 | -3,765 | -24.58 |
| Feb | 11,730 | 16,333 | -4,603 | -28.18 |
| Mar | 11,314 | 13,246 | -1,932 | -14.58 |
| Total | 94,052 | 121,186 | -27,134 | -22.39 |



Summary and school questionnaire feedback

‘The children understood where energy was wasted and how they could save it - there was a good range of activities and discussion which engaged the children.’

Ludham Primary School teacher

‘When we got back into the classroom they all told me to turn the lights off!’

Sheringham Primary School teacher

‘Children very well engaged in session - very interactive with lots of opportunity for children to use new vocabulary.’

Catfield Primary School teacher

Feedback from the children

‘Rozzie made me laugh and I want to save the planet from getting too hot and making the polar bears lose their homes.’

‘My sister and I love the song – we made our dad dance to it!’

Feedback from parents

‘...came home and told his dad that he could only have four minute showers and that he was going to time them!’

‘My daughter told me we had to save electricity for one hour a week.’

Media links and case studies

<http://www.energyrescuers.co.uk/north-norfolk/>

<https://drive.google.com/folderview?id=0B0Z-wytk7qEPU0hOdW16NW8zdlU&usp=sharing>

What was involved?

The Energy Rescuers programme was taken into 35 North Norfolk schools over a six-month period, being delivered to groups of up to 50 reception and KS1 children at a time. The programme aims to influence the habits of our youngest children – and so encourage energy saving into the future.

During the workshops the children listened to a story, learned a song and dance, participated in an energy-saving game and made an energy-saving promise. The children were keen to interact and learn about global warming and eager to work together on saving energy.

At the end of the workshop the children were delighted to meet Rozzie the energy-saving rat who gave each child a special book to take home to reinforce the energy saving message.

Furthermore, on the day of the workshop each school was asked to take a reading of their electric meter. A calendar was left with the school office for the caretaker to fill in on a weekly basis for three months, tracking any potential energy saving.

The feedback from the teachers has been positive and constructive.

What did we learn?

The energy rescuers programme was predominantly delivered to children between the age of 4 and 8, although a small number of groups of 2-3 year olds were also included.

Although the story and game was pitched at 5-6 year-olds, children of all ages, competencies and learning abilities understood and participated, with attention held throughout the workshops.

We also understand from feedback that Rozzie, the energy-saving rat, has had a lasting impact on the children. So much so that children have spoken about him independently in varying social environments and contexts.

What are the environmental and financial value of savings?

- The programme can deliver energy saving and financial benefits of at least £250 per year. This is equivalent to the cost of the programme to the school (1 year payback). However, some schools have doubled or trebled this saving and some have not sustained savings.... It very much depends on how a school supports children to implement the learning and channel their enthusiasm. The ENERGY RESCUERS programme is the inspiring starting point !

What recommendations do we have ?

We have some key preconditions for success and ideas for motivating longer term change;

- SLT/Headteacher/Governor backing and commitment (giving status and credibility to the programme)
- Involvement of caretaker/business manager so key people managing the building can support and see the benefits of pupil participation (thus ensuring whole school approach)
- Collection of basic data so that progress can be measured, analysed, shared and communicated (at best it is used as real life data within the curriculum and presented in motivating ways – depending on age and ability of the children)
- Comparison of data with other schools can help motivation (especially with the right balance of competition and collaboration). It also enables partnership opportunities
- Where pupils appreciate that they are developing skills as active citizens, leaders, mentors, that will benefit their own future – it can add to motivation and longer term commitment (for older children)
- A consistent approach and expectation for energy efficiency can mean behaviour change evolves into habits that help save energy and money over time and place
- That the ultimate sustained outcomes (both skills development, environmental outcomes and long term financial benefits) are achieved when the school undertakes a capital saving opportunity that assures energy savings (eg. Renewables project, LED or insulation etc..)

List of Schools worked with;

| School | Date of Energy Rescuers Programme |
|-------------------------|-----------------------------------|
| Happisburgh | 15/5/2015 |
| Corpusty | 19/5/2015 |
| St Johns Hoveton | 13/10/2015 |
| Antingham & South Repps | 23/9/2015 |
| Colby | 5/10/2015 |
| Sculthorpe | 7/10/2015 |
| Worstead | 9/10/2015 |
| North Repps | 12/10/2015 |
| Langham | 4/12/2015 |
| St Michaels Aylsham | 28/09/2015 |
| Horning Primary | 2/10/2015 |
| Blenheim Park | 3/12/2015 |
| Little Snoring | 14/10/2015 |
| St Marys | 15/10/2015 |
| Swanton Abbott | 16/10/2015 |
| Millfield | 21/10/2015 |
| Tunstead | 3/11/2015 |
| Holt | 23/11/2015 |

| School | Date of Energy Rescuers Programme |
|-------------------|-----------------------------------|
| Erpingham | 9/11/2015 |
| Bacton | 10/11/2015 |
| Greshams | 17/11/2015 |
| Neatishead | 18/11/2015 |
| Aldborough | 7/1/2016 |
| Walsingham | 4/11/2015 |
| West Raynham | 5/11/2015 |
| Blakeney | 6/11/2015 |
| Hindringham | 1/12/2015 |
| Stibbards | 2/12/2015 |
| Stalham | 11/11/2015 |
| Catfield | 16/11/2015 |
| Sutton | 24/11/2015 |
| Wells | 25/11/2015 |
| Kelling Primary | 25/01/2016 |
| Ludham Primary | 09/02/2016 |
| Sheringham Pr | 10/02/2016 |
| 35 SCHOOLS | |

Total cost of programme; 35 x 250 = £8,750

28 schools (80%) paid for by Sheringham Shoal fund (£7,000)

7 schools (20%) paid for by Norfolk County Council shared savings (£1,750)



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Thank you

Energy Rescuers now have a special section to their website highlighting the funding support and also sharing practice, information and case studies;

<http://www.energyrescuers.co.uk/north-norfolk/>

**Produced by Friends of Holt Hall, Energy Rescuers and Norfolk County Council
June 2016**



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FoHH Reg Charity 1151613
Holt Hall, Kelling Road, Holt, NR25 6RT