

## 'The Communal Zero CO<sub>2e</sub> Emission Certification System and other stories'

**APSE Renewables and climate change advisory group**

**Wednesday 12 November 2014, Manchester**

**Chiara Cervigni**

[ZECO<sub>2</sub>S](#) Project Coordinator

Energy and Carbon Management Team

Northamptonshire County Council

Investing in Opportunities



This project has received  
European Regional  
Development Funding  
through INTERREG IV B.



INTERREG IVB

# What do we do?

- **General energy & resource advice**
- **Energy efficiency surveys & schemes**
- **Energy procurement & contracts**
- **Renewable energy advice**
- **Behavioural change initiatives**
  
- **Simply.... A one stop shop for energy services in the county council, the county and beyond.**



# Achievements

**Since we started, directly for Northamptonshire County Council...**

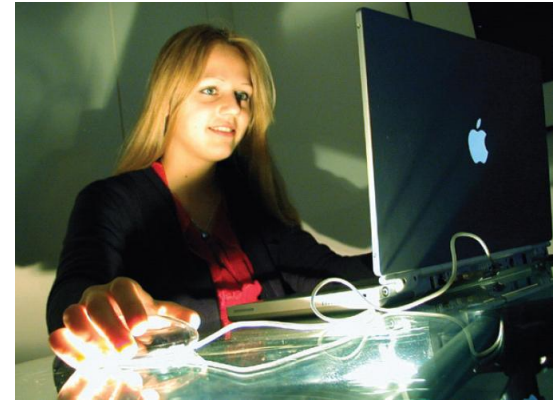
- **£8.6m energy savings**
- **£2.1m energy procurement savings for County Council**
- **Operational surpluses totalling over £1.2m**
- **...and over 80,000 tCO<sub>2</sub>e**



# Achievements

**Since we started, directly for  
Northampton Borough Council...**

- **£2.2m energy savings**
- **Facilitated a £3.7m CERT/CESP funding deal to improve housing stock for over 900 homes, works completed March 2013.**
- **LED lighting in St. Michael's multi-storey**
- **...and over 14,000 tCO<sub>2</sub>e saved**



# Our achievements

- **Carbon Trust Standard re-certification for reducing carbon emissions across the Council estate and operations by 18% (2013/2012 compared to previous two years)**
- **Member of the Energy Institute**
- **Part of European and International projects**



Northamptonshire  
County Council  
2009 - 2011  
2011 - 2013  
2013 - 2015



Northamptonshire  
Borough Council  
2010 - 2012  
2012 - 2014



*Action for Warm Homes*

Partnership Award  
2014  
Regional and National



Interreg Programme IVB Project  
ZECOS UK Lead Partner

**ZECO<sub>2</sub>S**  
Zero CO<sub>2</sub>e Emission Certification System



Northamptonshire  
Energy Saving  
Service (NESS)  
2012 & 2013



Seed Project  
2013



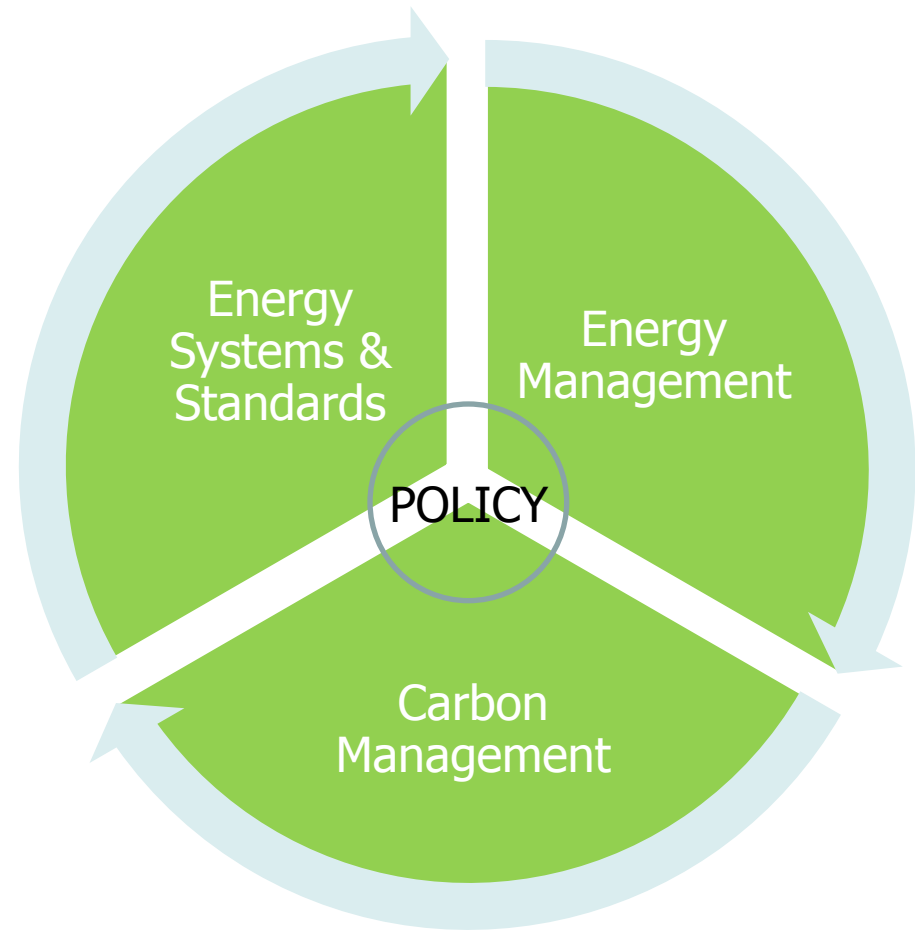
Zero Cost  
Energy Saving  
Service  
2014



Northamptonshire  
County Council

# Scope

- **Individual**
- **Local**
- **County**
- **Regional**
- **National**
- **EU**
- **Global**



# Strategic Alliances



**How did these come about?**





# Strategic Alliances: Mutual Aims

- **Creating Competitive Advantage**
- **Developing a Smarter Green economy**
- **Resource Security & Energy Wellbeing**
- **Smart Living**





# How Strategic Alliances Operate



**Long Term  
Relationship  
Realising the  
benefits to create  
Win-Win!**

# Strategic Alliances: Tangible Benefits

- **Direct & in-kind funding**
- **Upfront investment**
- **Cash savings**
- **Energy savings**
- **Knowledge Transfer**
- **Sponsorship**
- **Collaboration**

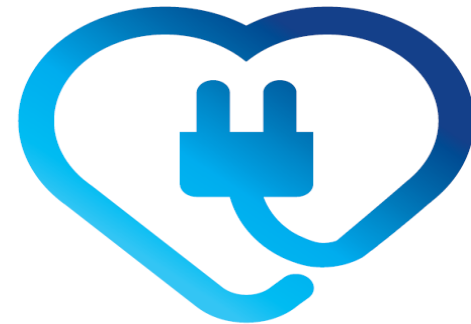


- ***£150m + of investment planned for Northamptonshire that would otherwise not have happened... and more in the pipeline!***

# Examples:

## Environment: Free Electric Vehicle Charging Points

- Electric charging points free for all residents available throughout Northamptonshire
- Paid for by British Gas to encourage electric vehicle take-up in future.
- Worth around **£1500 per house.**
- Potential overall investment **£5m**



free electric vehicle  
**CHARGING POINT**

NORTHAMPTONSHIRE



# Examples:

## Leisure: Upfront Capital Investment

- Energy performance contract between British Gas and Northampton Leisure Trust to improve energy use at 3 swimming pools
- Upfront capital investment of **c. £1.5m** – to be re-paid from energy savings
- Access to national British Gas swimming campaign
- Plus direct Sponsorship

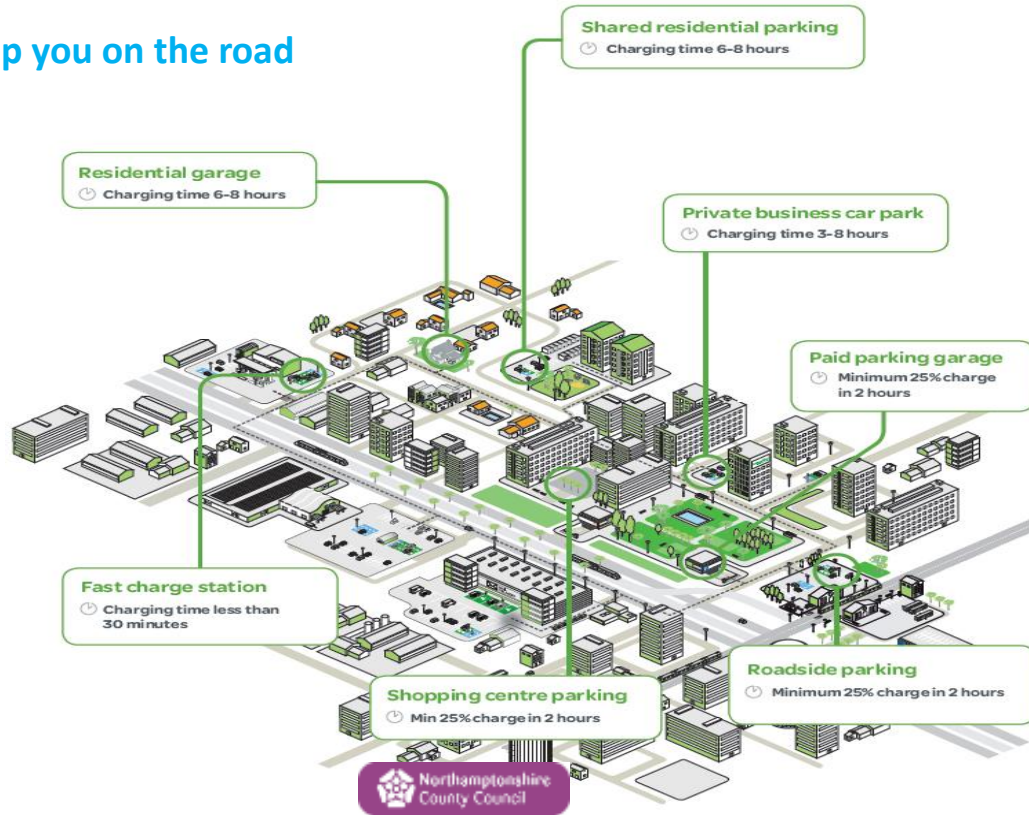


# Examples:

## Smart County: Resource Efficiency

Real Solutions to keep you on the road

Infrastructure  
Regional schemes  
Taxis and Car clubs  
Public sector fleets  
Private Sector



## What is ZECO<sub>2</sub>S?

***Development and Introduction of the Communal  
Zero CO<sub>2e</sub> Emission Certification System as a  
Tool for Sustainable Communities and Regions***



**ZECOS is a European funded project which aims to develop a ZERO CO<sub>2</sub> EMISSION certification system for COMMUNITIES**

Investing in Opportunities



This project has received European Regional Development Funding through INTERREG IV B.



INTERREG IVB







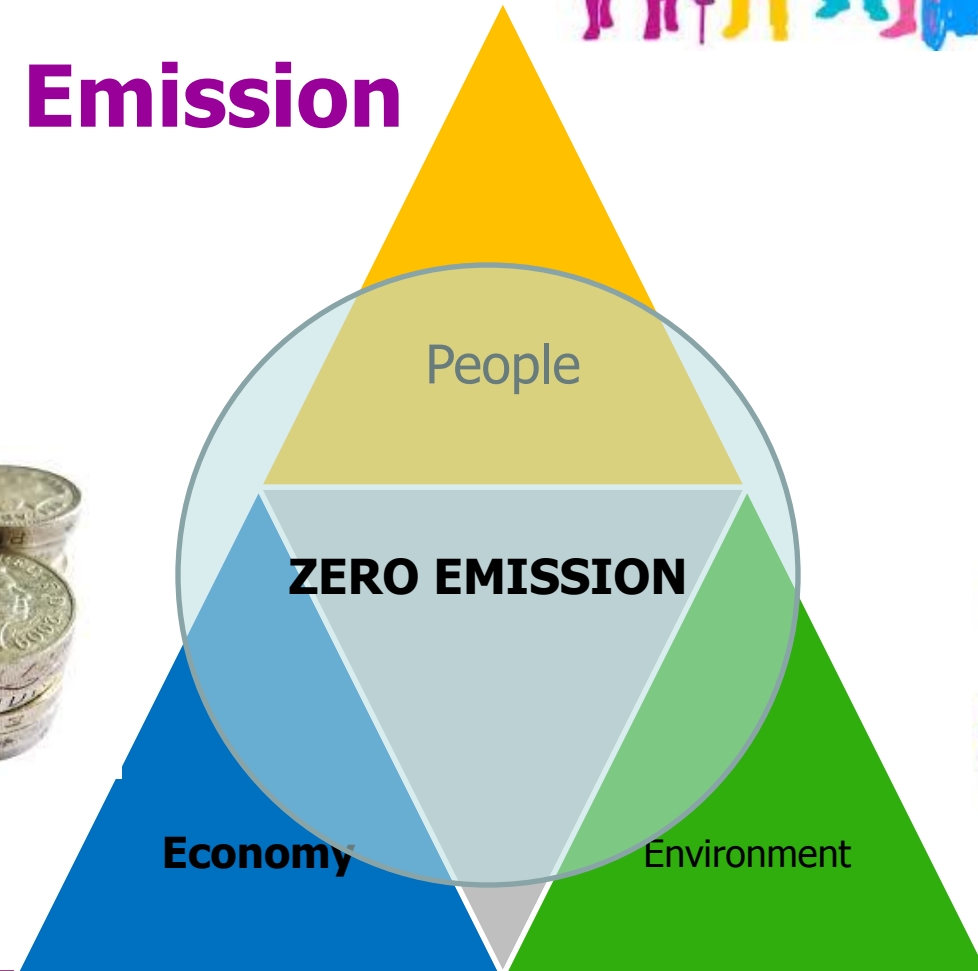
## ZECOS – partner



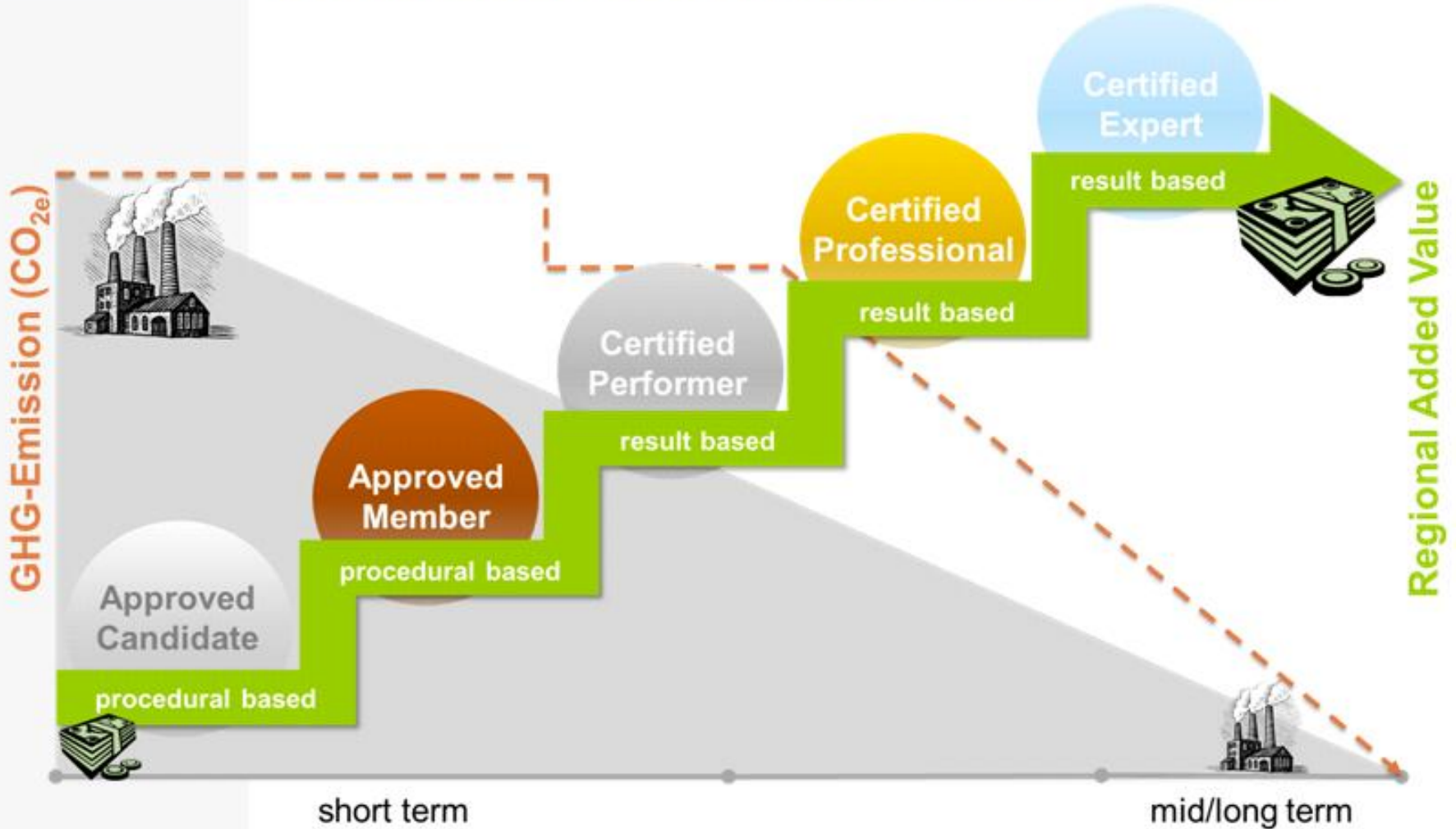
- **Duration of the project: 2011 – 2015**
- **11 partners from UK, Germany, Belgium and Ireland**
- **Five communities in four Countries are working to reduce their CO<sub>2</sub> emissions and grow sustainably**
- **Universities and other institutions are developing a new certification system to award communities that achieve significant Carbon reduction goals**



## What is a Zero Emission Concept?



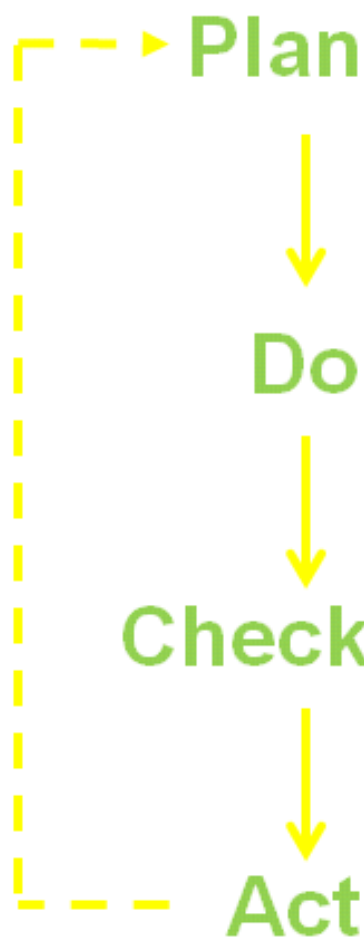
# ZEMS awarding levels: continuous improvement in GHG reduction







## implementation steps: degree of performance



- ❖ Zero-Emission-Statement
  - ✓ Zero-Emission-Manager
  - ✓ GHG-Inventary
  - ✓ Potential analysis renewables and efficiency
  - ✓ Key Performance indicators
  - ✓ GHG objectives, targets and actions
  - ✓ Financial analysis
- 
- ✓ Stakeholder consultation
  - ❖ Social development
  - ✓ Documentation
  - ❖ Green financing opportunities

**WP3 / WP1**  
(Zero-Emission-Concept)

- ✓ Monitoring plan
- ❖ Internal audit
- ❖ External audit

**WP1**  
(Practical testing of ZEMS)

- ❖ Corrective actions
- ❖ Governance review
- ❖ Continious Improvement

**???**  
(follow up evaluation)

## What are we doing within the project?

# Practical activities to reduce emissions:

- 1) Resource Efficiency programmes across the County's schools**  
*A practical educational programme to encourage schools across the county to become more energy, water and waste efficient*
- 2) Schools Carbon Trading project** *An annual competition with the winner being the school with the biggest reduction in carbon emissions over a 12 month period*
- 3) Supporting the development of a Biomass Supply Chain across the County**  
*Starting from 4 biomass installations in selected schools (which are the object of the investment under the ZECO<sub>2</sub>S project), the objective is to develop a county-wide local and sustainable biomass supply chain to support further installations in the county*





# ZECO<sub>2</sub>S

Zero CO<sub>2e</sub> Emission Certification System



Prince William School, Oundle



Brington Primary School, Long Buckby



Yelvertoft Primary School, Braunston and Crick

## Biomass boilers for schools

**1<sup>st</sup> School (Yelvertoft) COMPLETED! Biomass  
Boiler up and running!**

**Opening Ceremony on 10th October**







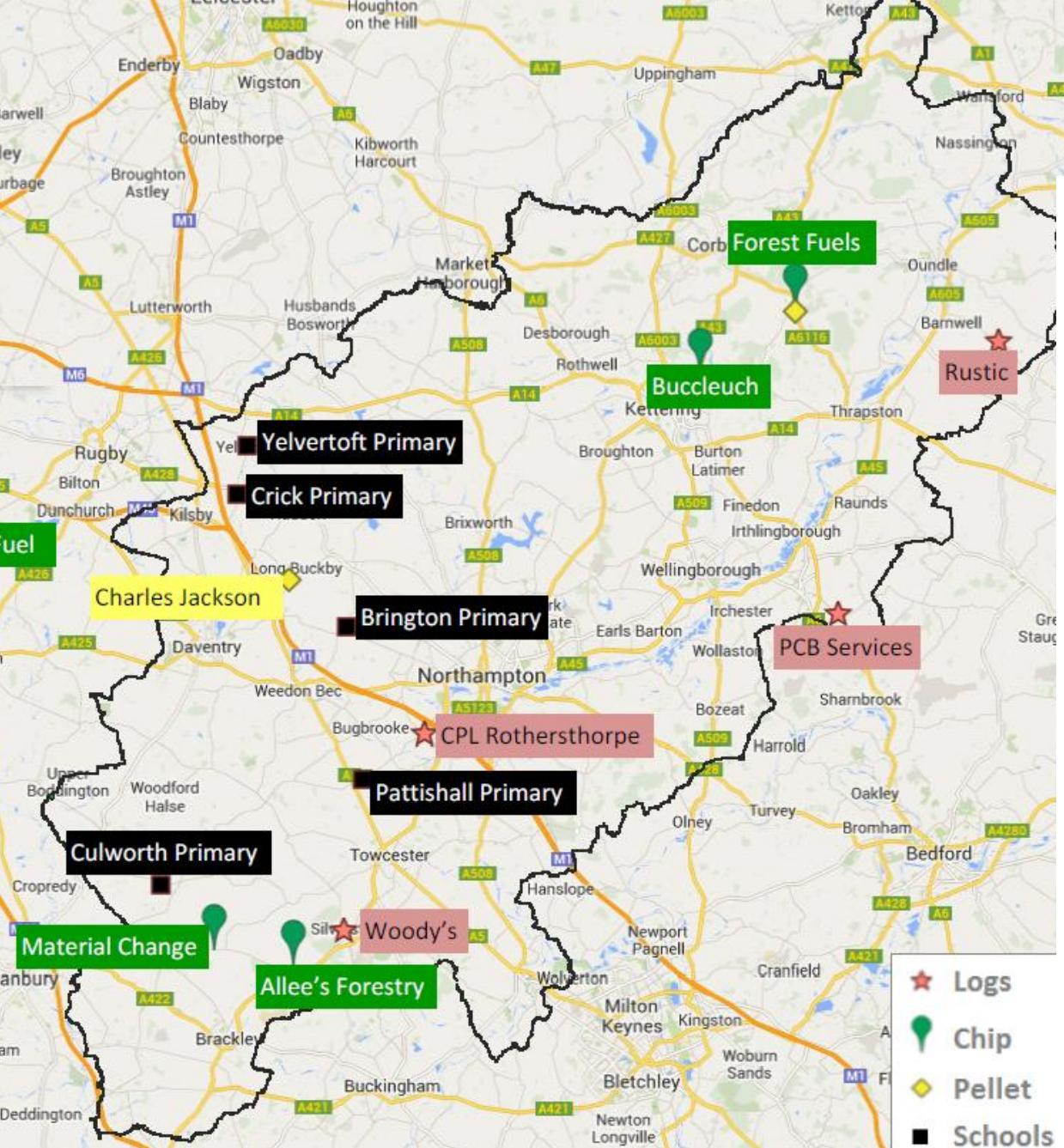


- **Next installations:**
- **Crick School - container**
- **Pattishall School – internal solutions**
- **Gateway School – internal solution**
  
- **All by December 2014!**

# Biomass Supply Chain development

- **Consultancy worked to assess different fuel options in Northamptonshire to develop a Sustainable and Local Supply Chain (considering local Miscanthus)**
- **Mapped existing fuel suppliers**
- **Carbon modelling**
- **Now procuring a biomass supply and heat contract on behalf of the schools!**





Developing biomass supply chains in Northamptonshire for the ZECOS project

Northamptonshire County Council

- ★ Logs
- 📍 Chip
- ◆ Pellet
- Schools

Climate Consulting Ltd  
 5<sup>th</sup> Floor, Stephenson House, 2 Cherry Orchard Road, Croydon, CR0 6BA  
 Tel 0208 633 9700  
[www.climate-consulting.co.uk](http://www.climate-consulting.co.uk)

March 2014





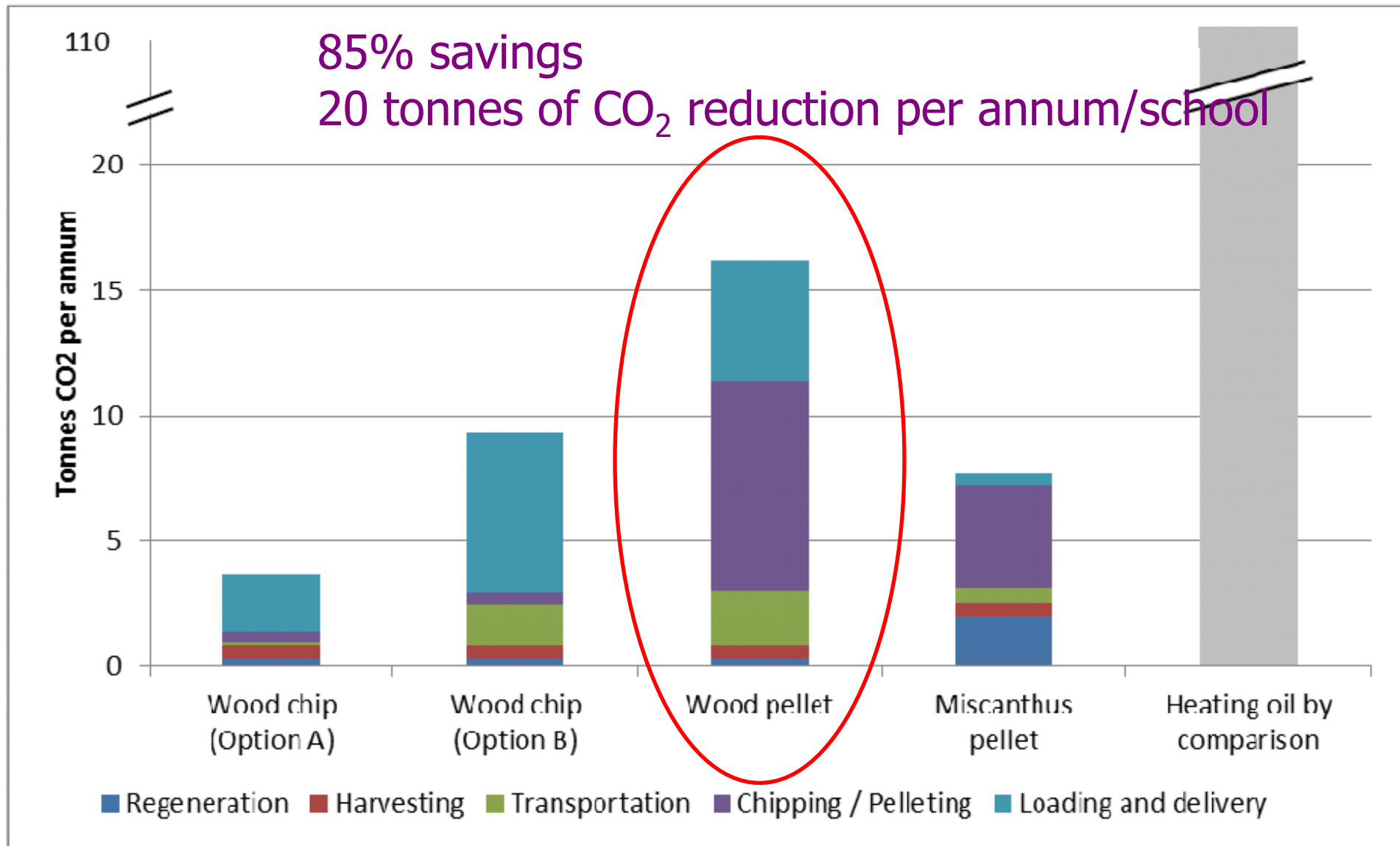


Figure 11 - Annual CO<sub>2</sub> emissions relating to the supply of each biomass fuel to heat the five ZECOS project schools. Heating oil carbon is shown for comparison with a split scale.

## WHY NOT MISCANTHUS?

- **Asked to test boilers with local produced Miscanthus pellet**
- **The local supplier of Miscanthus pellet has decided to stop the production**
- **The biomass boilers provider has confirmed the manufacturers are not able to provide warranty if the boilers run on Miscanthus pellet.**

## WHY NOT WOOD CHIP

- 1. Spatial constraints on the sites. At Yelvertoft, for ex, the use of wood chip would require sacrifice of either parking space or playing field area.**
- 2. Service and maintenance costs. These will typically be 20% higher than those included in the submission for wood pellet" (Ashwell tender response).**
- 3. The capital cost of the fuel feeding equipment is higher than for wood pellet**

## WHY PELLET

- **Very consistent fuel type**
- **Require a smaller storage area than wood chip**
- **There is a robust and competitive supply chain in place which will guarantee security of supply**
- **Pellet deliveries are also quick and convenient, minimising time on site to re-fill the store, (important particularly for sites such as schools where physical access for vehicles on to the site is limited)**

## Analysis supporting the certification

## BOUNDARIES OF THE ANALYSIS

**Northamptonshire:**

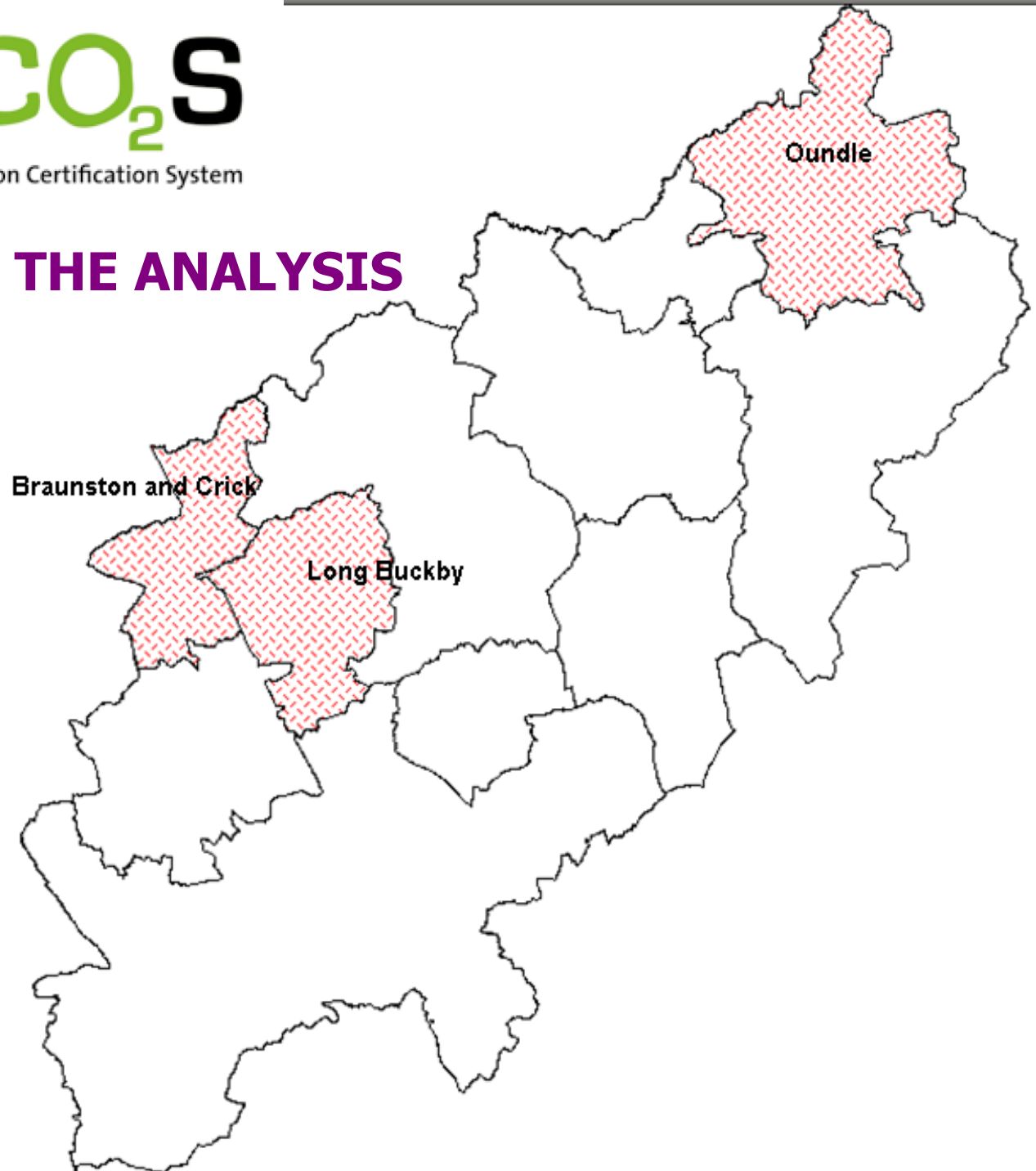
**Area: 2364 Km<sup>2</sup>**

**Population: 651 800**

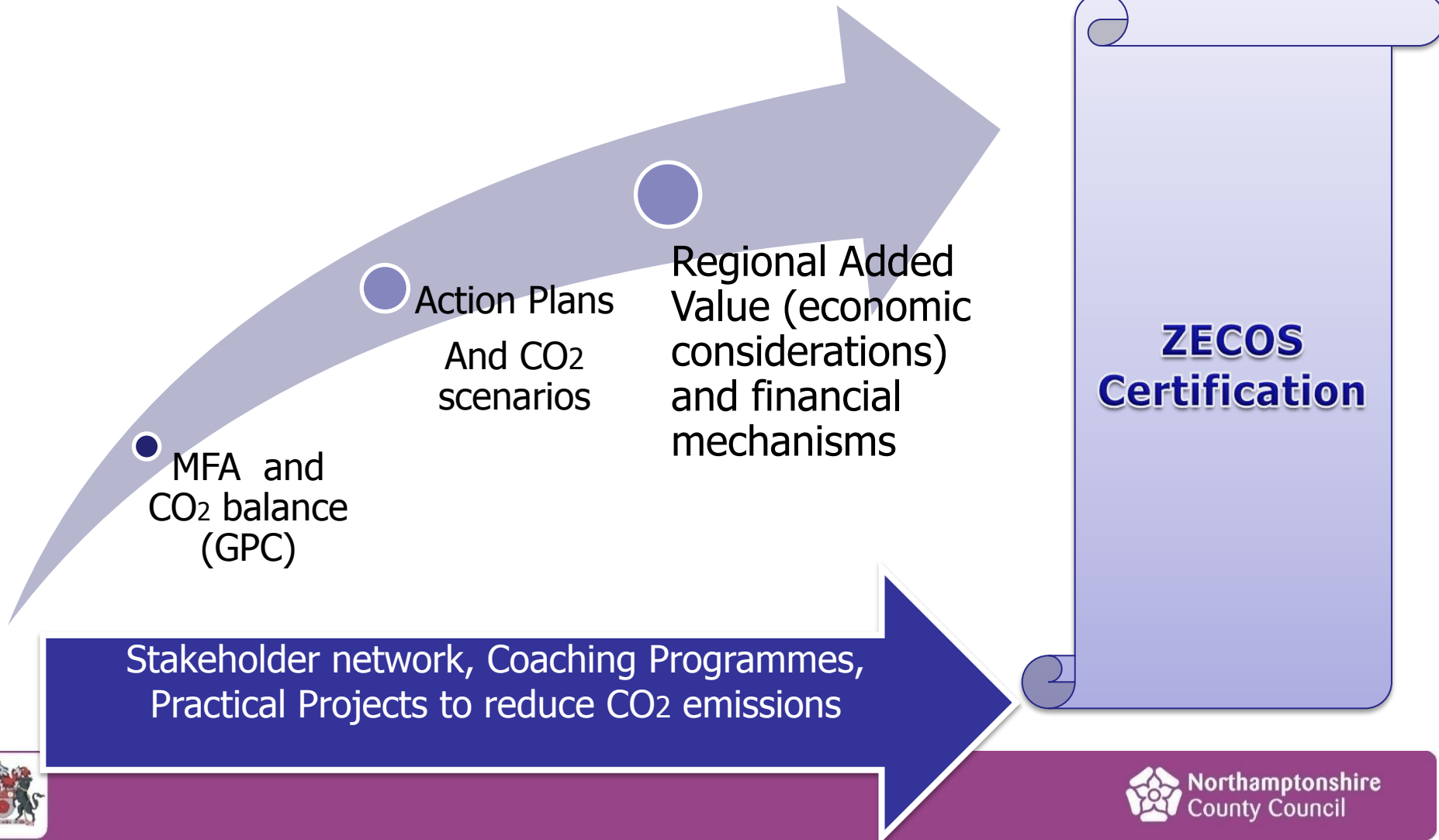
57 Electoral divisions

### **3 Communities:**

1. Oundle
2. Braunston and Crick
3. Long Buckby



## Analysis supporting the certification

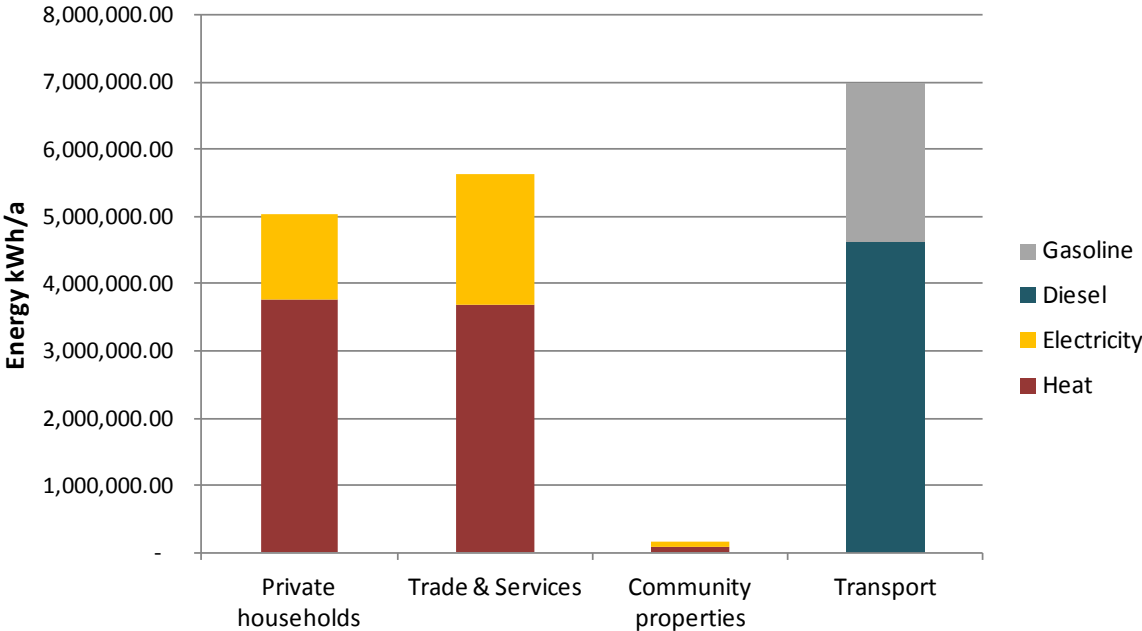




## Key results for Northamptonshire:

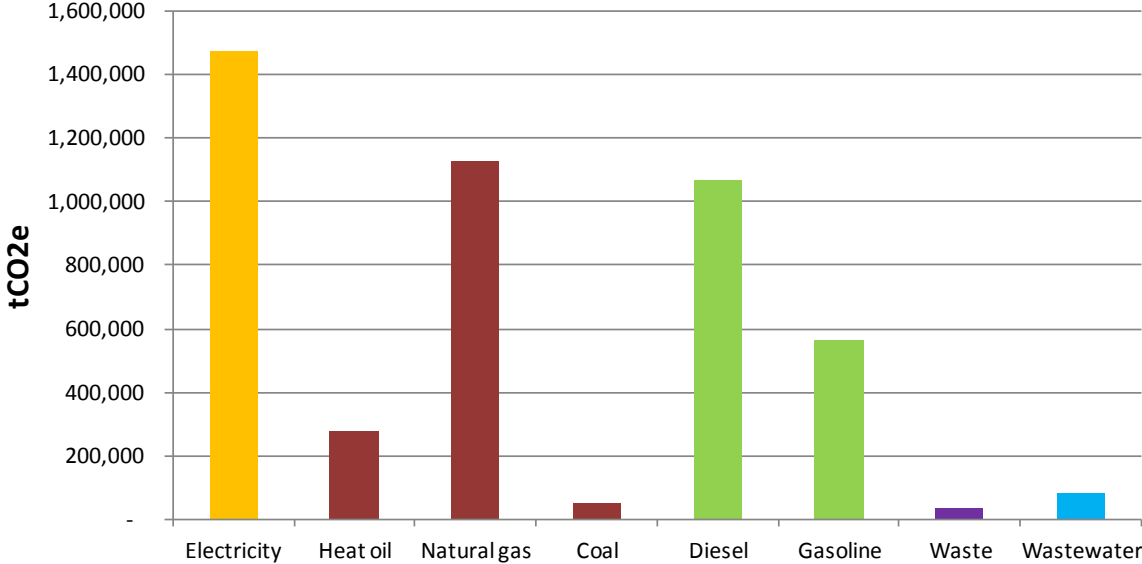
- **Total electricity consumption 2011:** 3,298 GWh/a, with the Trade and Services sector as main consumer (58%)
- **Total heat consumption 2011:** 7,533 GWh/a, with the Private households sector being the main consumer (50%)
- **Total estimated consumption by the transport** sector was 6,979GWh/a
- **Economic potential for saving** about 513 GWh/a estimated to be financially viable by implementing energy efficiency in the domestic sector, the majority of this being heat savings.
- **Estimated technical potential for renewable electricity** 9,723 GWh/a and for heat 3,569GWh (sufficient to supply current electricity demand but not heat demand)
- Estimated **economic potential for renewables** based on what financially viable now however, accounts for only 7 % of the overall technical potential

# Energy Consumption by Sectors in 2011

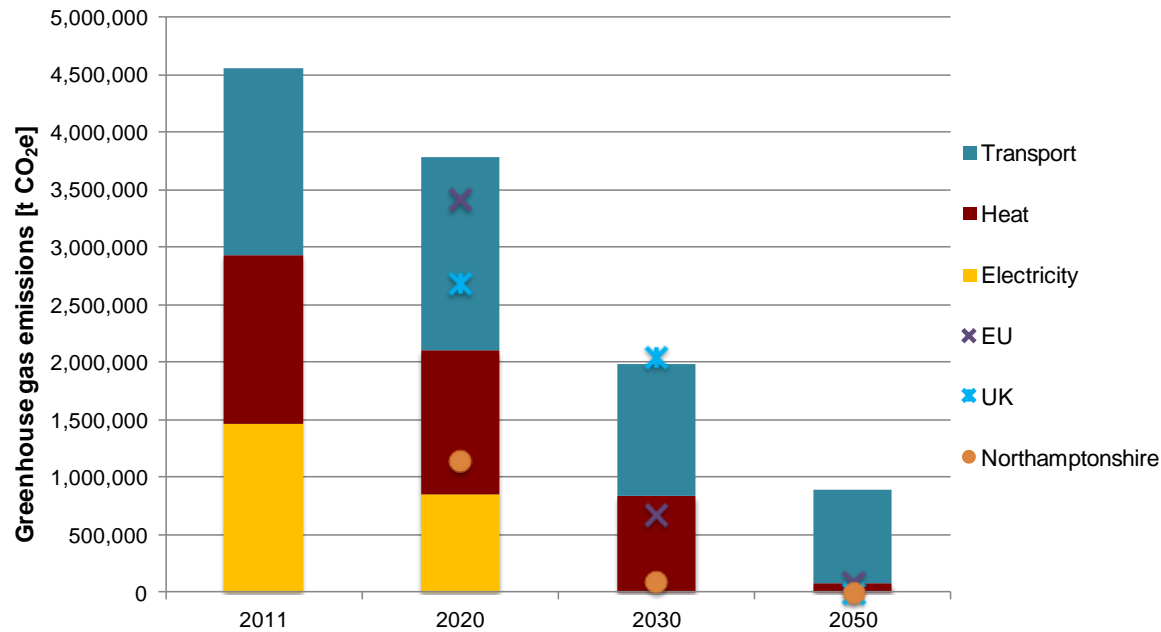


# Northamptonshire: Current situation

# Greenhouse Gas Emissions 2011

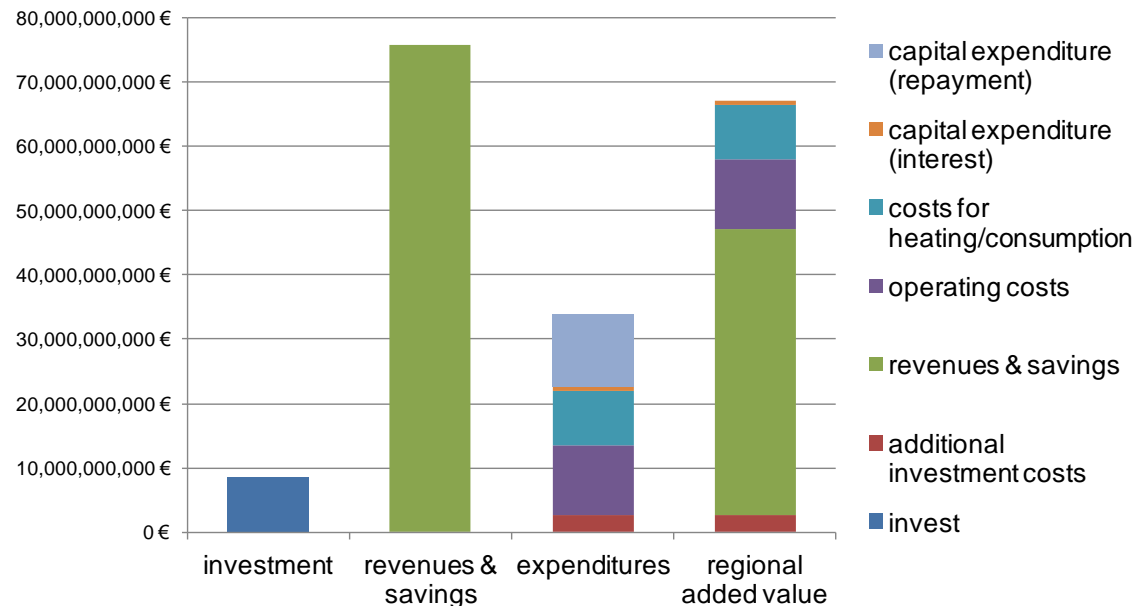


## Development of greenhouse gas emissions until 2050



# Northamptonshire: Energy and RAV Scenarios by 2020, 2030, 2050

## Aggregated regional added value over 20 years



## Pilot Projects



**30+ Cities**  
**May-October 2013**

## Communities engagement



Northamptonshire County Council is proud to offer:

## Five events to help your community on the path to a zero carbon future

**ZERO CO<sub>2</sub> Communities – more than a burning ambition**

Whether you are already involved with the green agenda or are interested in supporting your community, we look forward to welcoming you to this free programme of events!

**Four countries, eight communities, one goal.**



## Events programme

### 1. Introduction – Maximising your community's potential

An introduction to the ZECO2S project and how it can benefit your community. Meet the team and understand your community's potential for low carbon schemes.

### 2. Empowering your community

What would you like to see happening in your community and how can you get the money to fund it? How to prioritise projects for maximum community benefit?

### 3. Learn and share

Hear the experts view and meet other communities involved in successful projects. Guest speakers will be selected based on the outcomes from session 2.

### 4. Understand your potential

Learn about the actual potential in your community from specific projects, including CO<sub>2</sub> reduction and economic added value.

### 5. Round up and celebration

A conclusive event to summarise the programme, plan for the future and celebrate achievements on the path to a Zero Carbon Community!

## Dates and venues

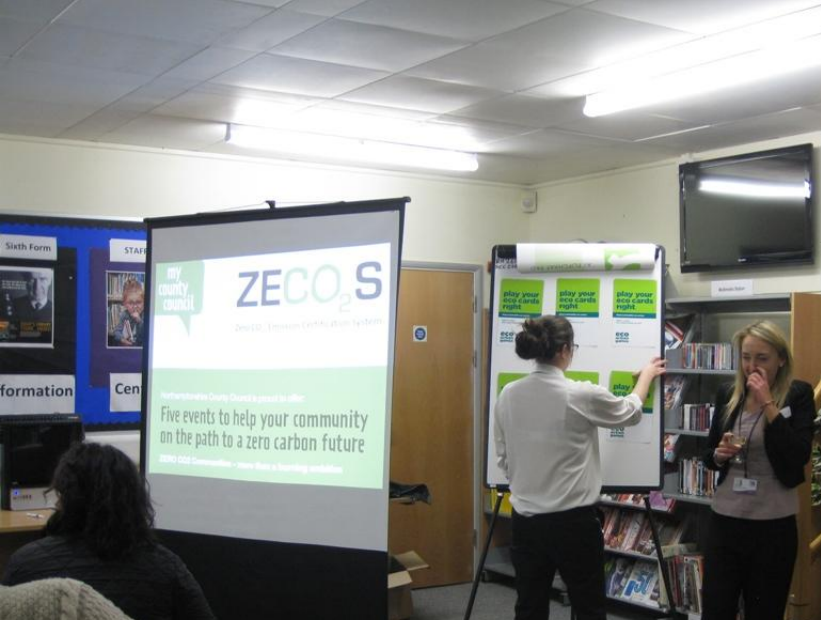
The programme will be run in three communities. Initial events will be kindly hosted by our ZECO2S Champion Schools. Find out what they have already been up to!

<b>Oundle Community</b> Venue: Prince William School, Herne Road, Oundle, PE8 4BS	1st Event: 4 February, 7–9pm
<b>Long Buckby Community</b> Venue: Brington Primary School, Little Brington, NN7 4HX	1st Event: 5 February, 7–9pm
<b>Braunston and Crick Community</b> Venue: Yelvertoft Primary School, Yelvertoft, NN6 6LH	1st Event: 6 February, 7–9pm

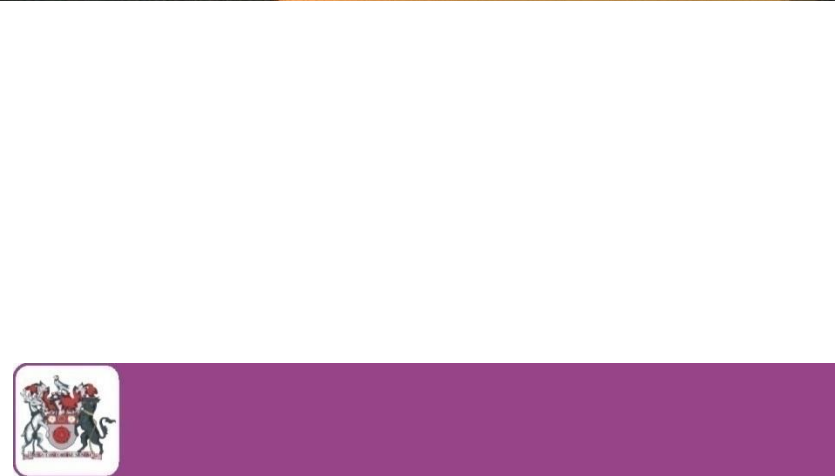
### Refreshments will be provided!

To take part please register by emailing:  
[lowcarbon@northamptonshire.gov.uk](mailto:lowcarbon@northamptonshire.gov.uk) or call  
 01604 366948

For more information see:  
[www.greenernorthants.org/portfolio\\_category/zecos/](http://www.greenernorthants.org/portfolio_category/zecos/)







**Key message: "CLIMATE PROTECTION" ?**

**ZERO EMISSIONS =  
Cleaner, greener and  
MORE PROSPEROUS community!**



Northamptonshire  
County Council

# ZECO<sub>2</sub>S

Label	none	1 month up to 2 cycles	3 cycles	6 cycles	10 cycles
	ZECO <sub>2</sub> S	ZECO <sub>2</sub> S	ZECO <sub>2</sub> S	ZECO <sub>2</sub> S	ZECO <sub>2</sub> S





## Thank you for your attention!



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Zero CO<sub>2e</sub> Emission Certification System

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INTERREG IVB

[HTTP://WWW.GREENERNORTHANTS.ORG/PORTFOLIO\\_CATEGORY/ZECOS/](http://www.greenernorthants.org/Portfolio_Category/ZECOS/)



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