# Irish energy-use behaviour intervention initiatives for mass media communication.

-Energy-use behaviour

-Energy efficiency campaigns

-Greater understanding of issues and factors

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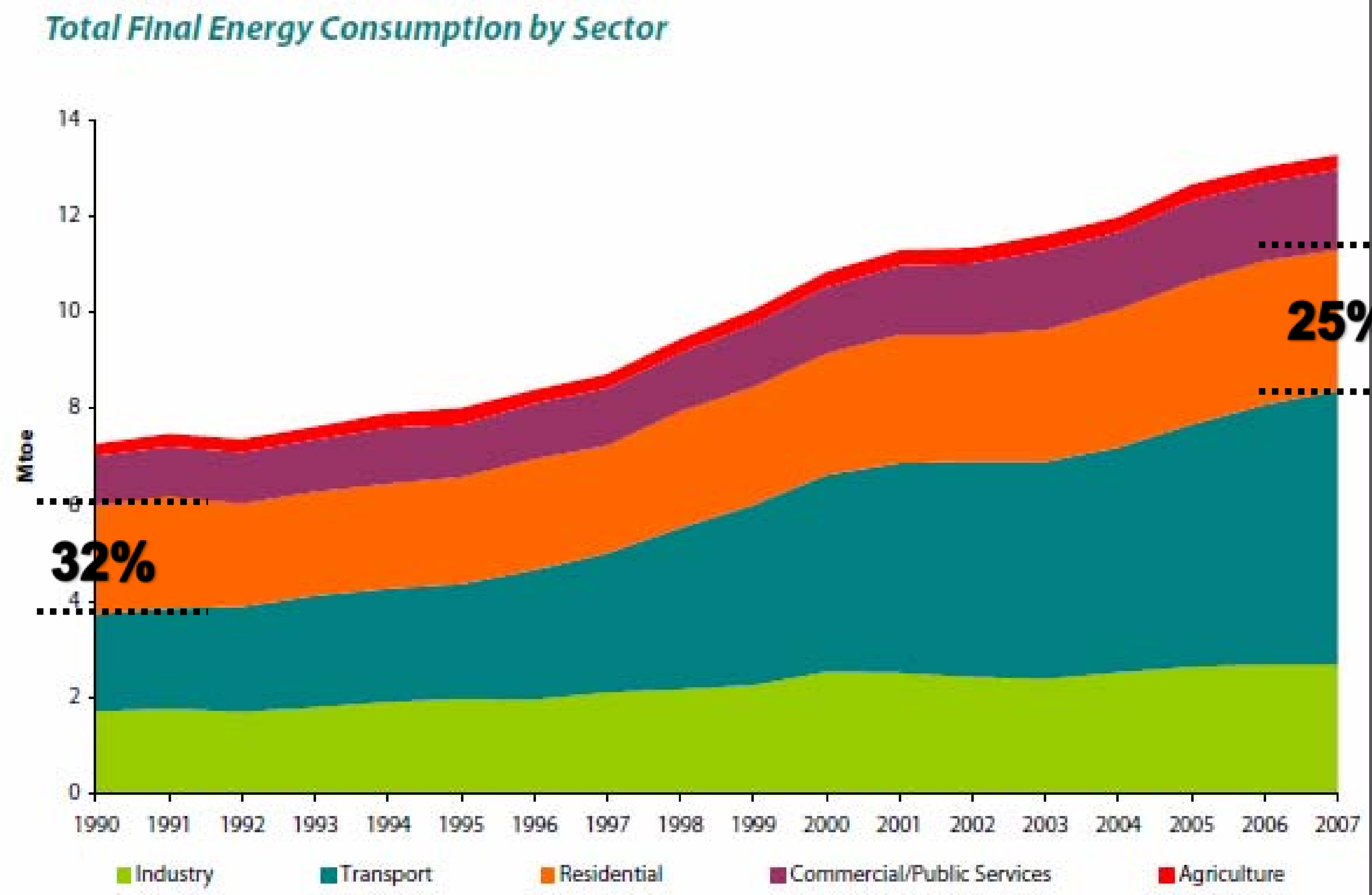
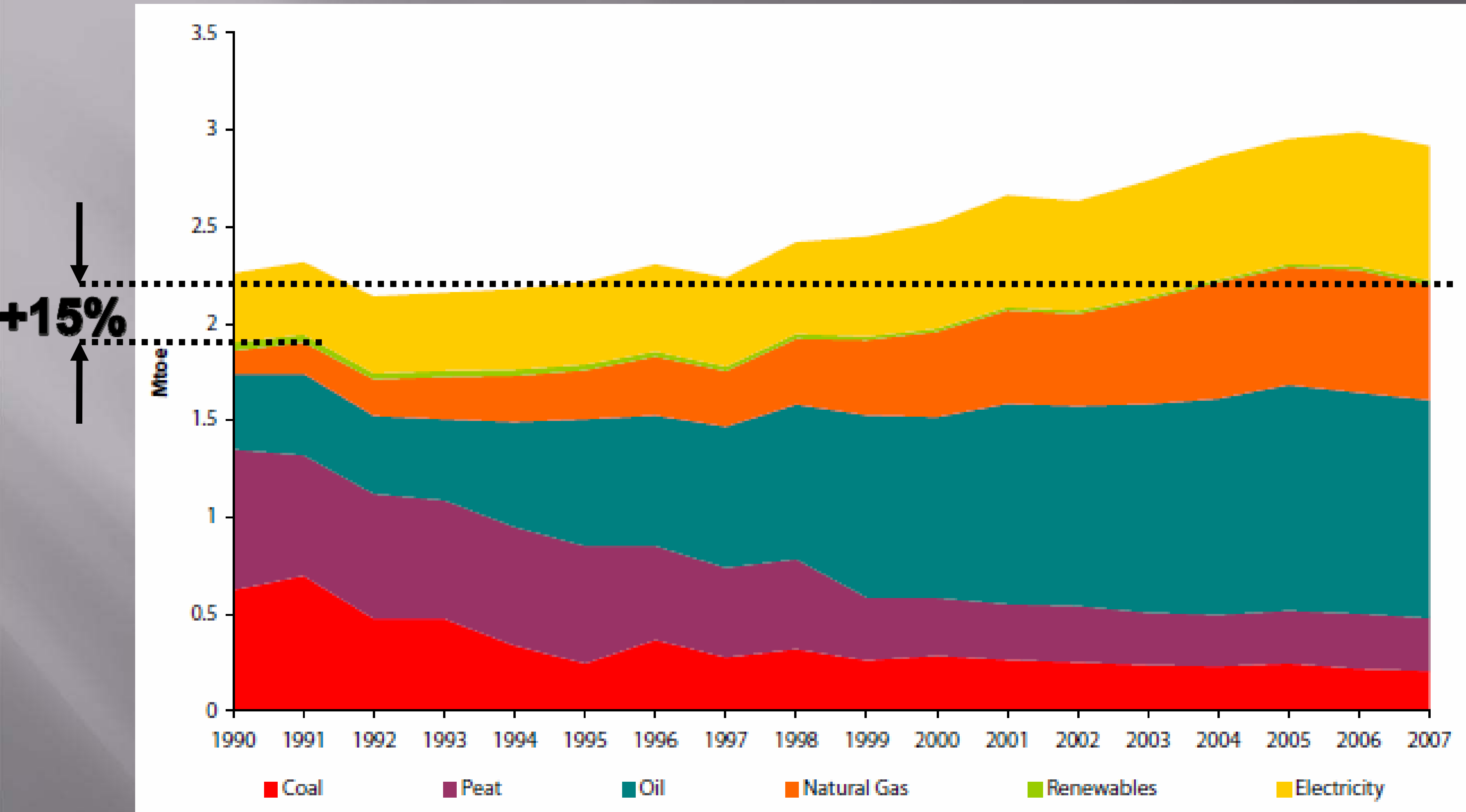
# Energy consumption trends in Ireland




Source: Sustainable Energy Ireland (sei.ie)

# Energy consumption trends in Ireland

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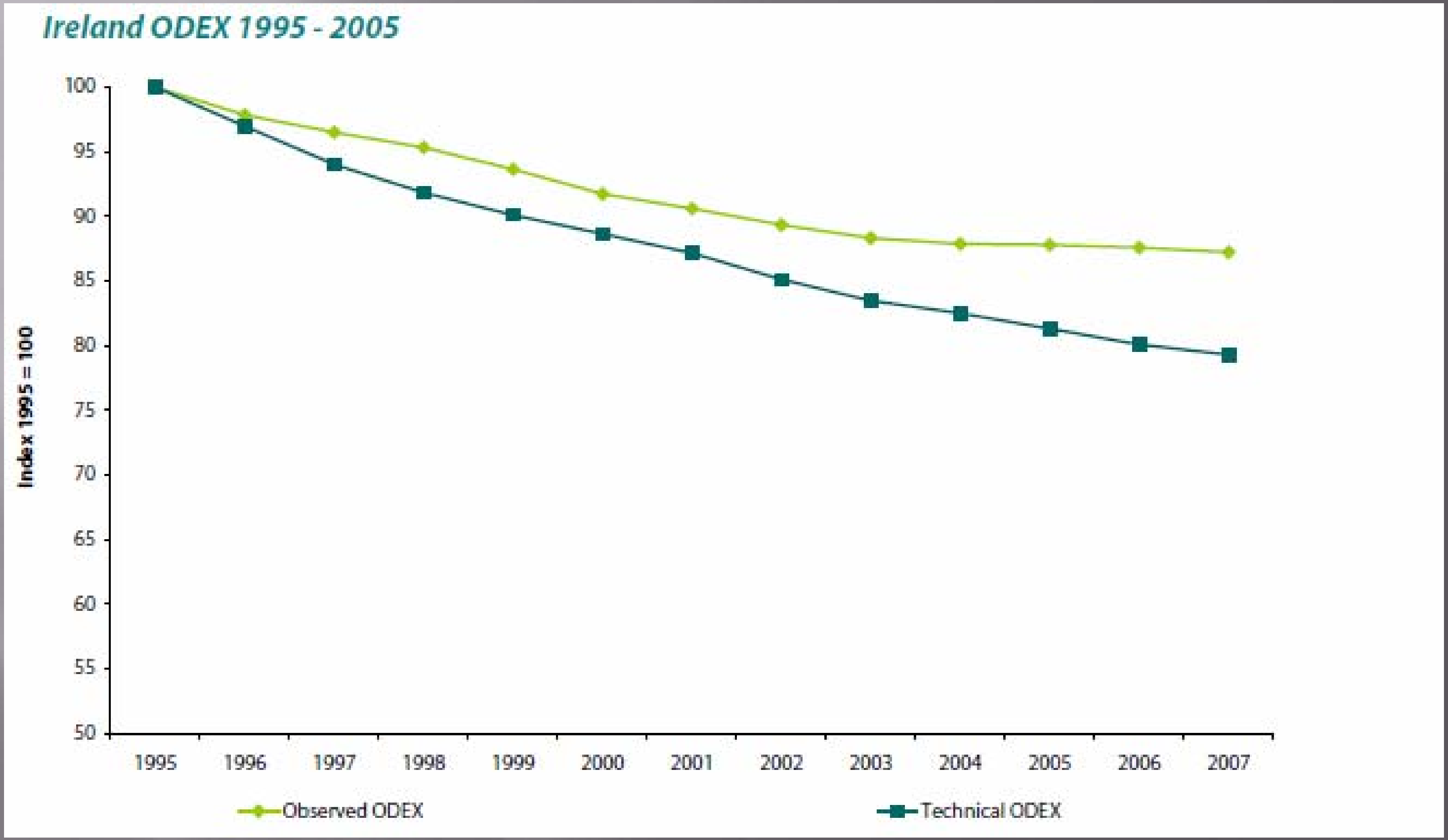


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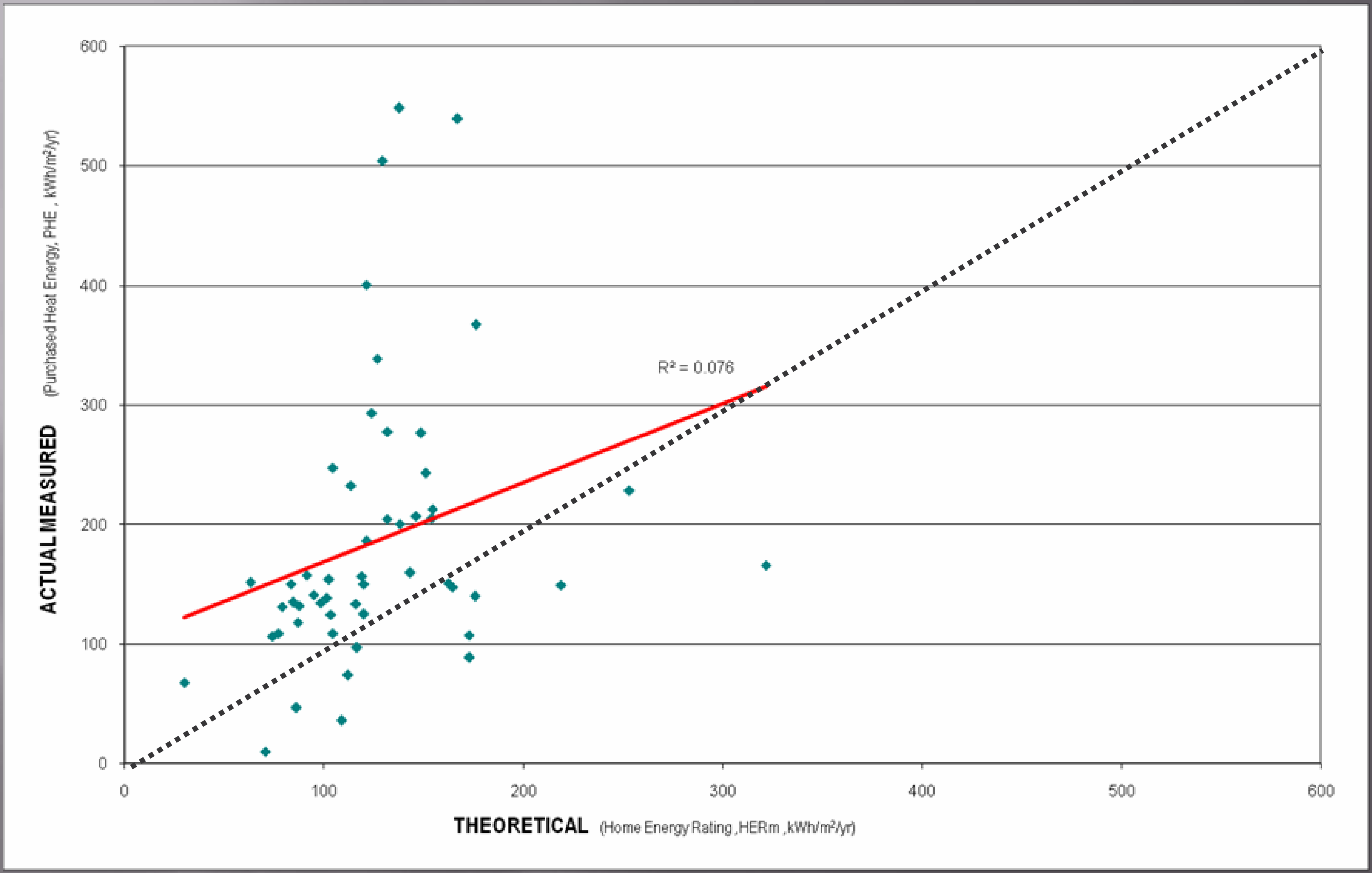
# Actual v's Theoretical energy

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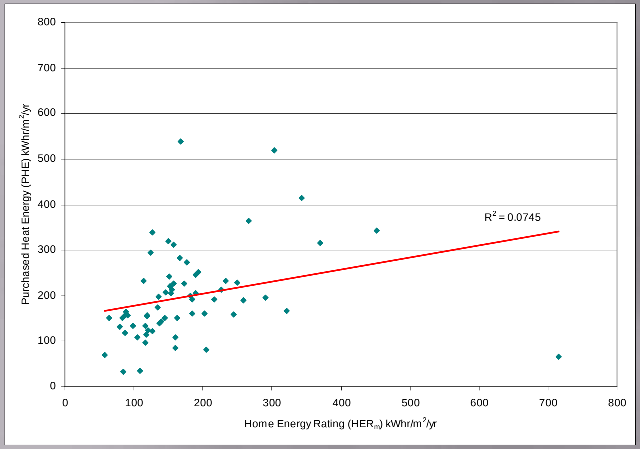
# Actual v's Theoretical energy – types of differences



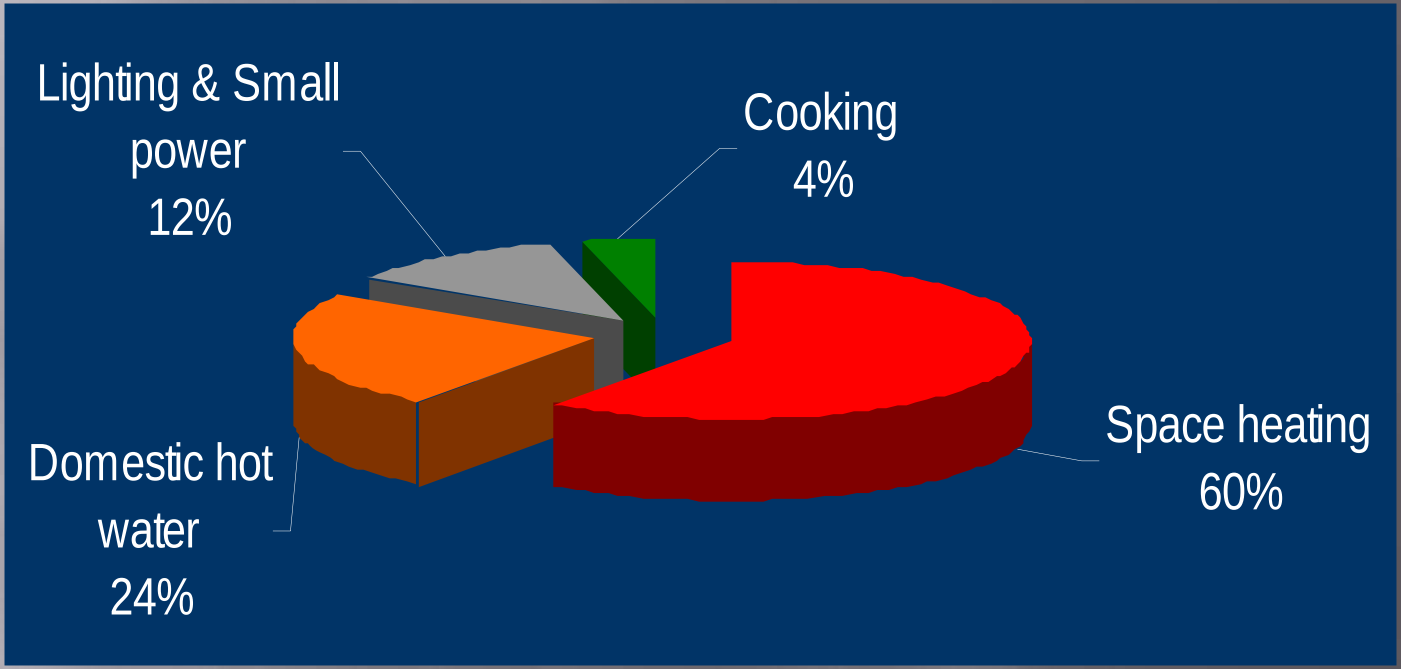

*Non-behavioural:*

- *-microclimate*
- *-construction quality*
- *-fabric integrity*
- *-system maintenance*
- *-electrical appliances/equipment*

*Behavioural:*

- *-operational efficiencies*
- *-heating periods*
- *-room temperatures*
- *-occupation periods*
- *-hot water consumption*
- *-lighting usage*
- *-small power appliances & equipment usage habits*

# Does it matter to individuals...




*-Average Irish household €1,767 per year on energy*

*-Average household consumes 25,304 kWh/yr (78% fossil fuel, heating/hot water/cooking & 22% electricity)*

*-Proportion of household disposable income spent on energy ranges from 1.7% to 13%...*

# Recent drivers

-Energy-use behaviour in national & EU energy efficiency policies

- *'Delivering a sustainable energy future for Ireland' (2007)*
- *'Action Plan for Energy Efficiency: Realising the Potential' (2006)*

-European regulation (EPBD)
-Fuel price shocks
-Availability and evolution of technologies...

Resulting in:
*-Government commitment to implement a National Energy Efficiency Campaign (2007/08)*

- Power of One

(Department of Communications, Energy and Natural Resources, www.dcenr.gov.ie)

power of one
energy efficiency for Ireland

*-National television station (RTE) prioritised environment and environmental heritage in its themes for programming (2007)*

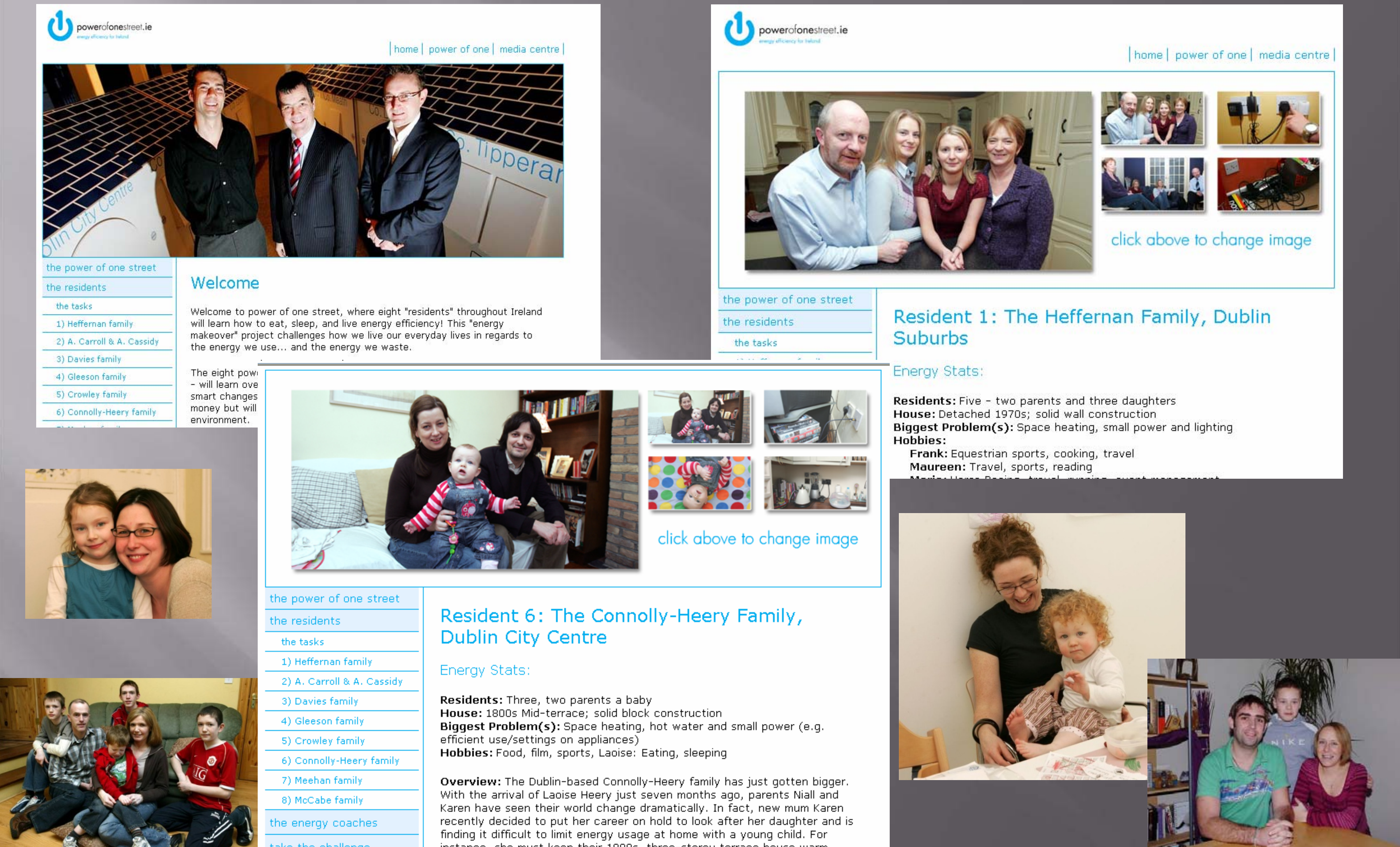
- *"My family aren't wasters..."*

RTE

# Power of One Street (2007/08)

*www.sei.ie/Power_of_One/Power_of_One_Street/*


- -Phase 1 (2007), Phase 2 (2008)
- -12 households, 2 businesses, 1 school
- -Web and mass media based
- -Experiential, driven by tips and feedback
- -Energy Challenges *(site specific tips and feedback)*
- -Energy Coaches

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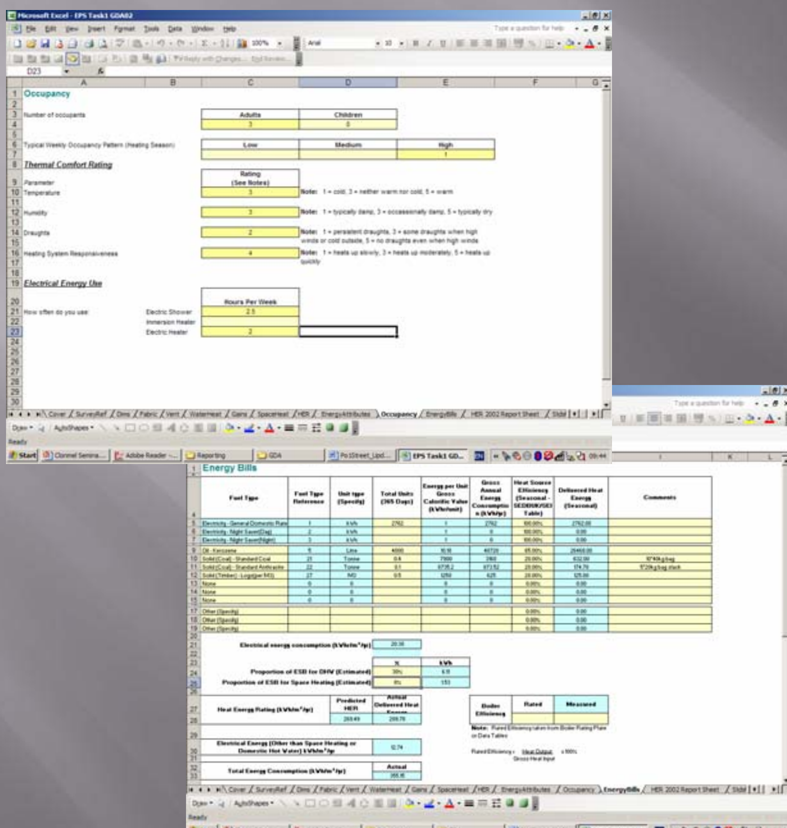
# Power of One Street – Energy Challenges (2007/08)

- Month 1: Space heating
  *e.g. adjust temps, zoning, door/window/curtain usage…*
- Month 2: Lighting
  *e.g. usage/switching*
- Month 3: Domestic hot water
  *e.g. adjust temp, adjust timing, consider usage (taps running etc…)*
- Month 4: Small power
  *e.g. chargers, appliances/electrical equipment*
- Month 5: Cooking
  *e.g. kettle usage, cooking patterns, lids, etc…*
- Month 6: Eco-drive Challenge
  *Timed period to minimise energy consumption using own approaches and what has been learnt…*

# Power of One Street – Tips & Feedback (2007/08)

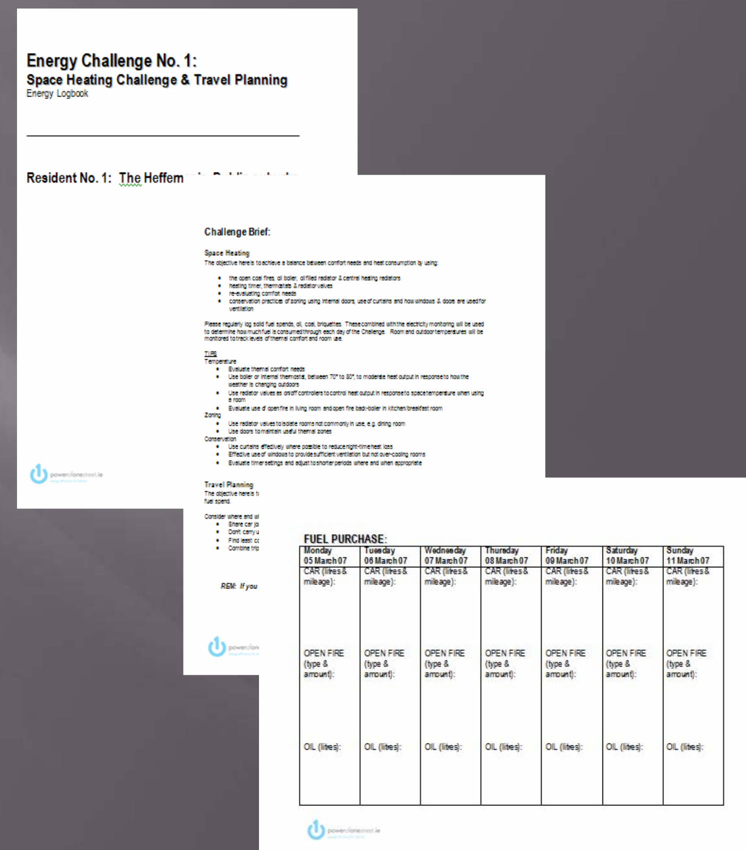
## -Baseline characterisation

- fuel consumption
- electrical consumption (total at mains incomer)
- energy survey
- appliance/equipment audit




## -Energy logbooks

- general tailored tips
- diary log (fuel, electric and non-energy)

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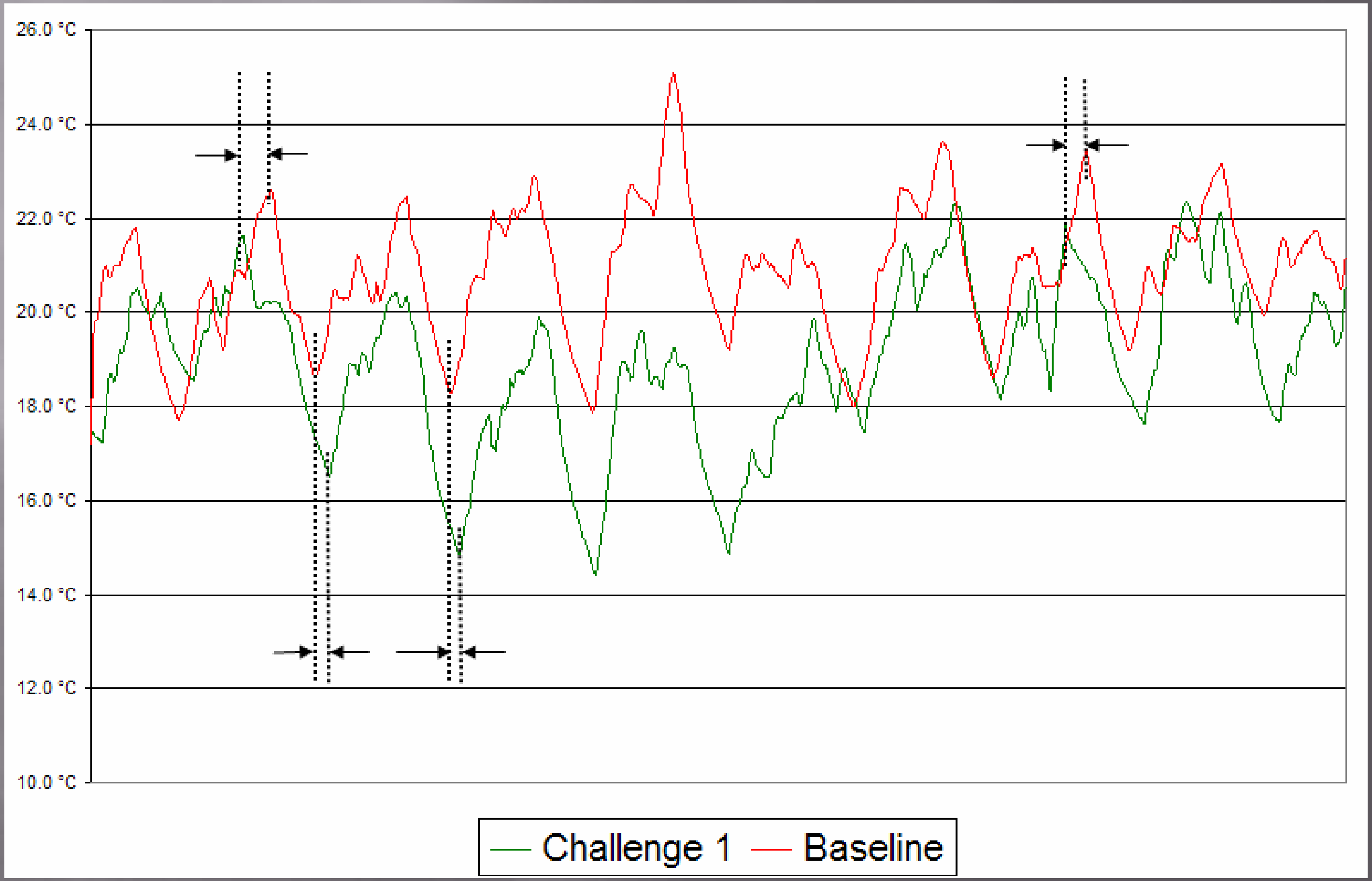
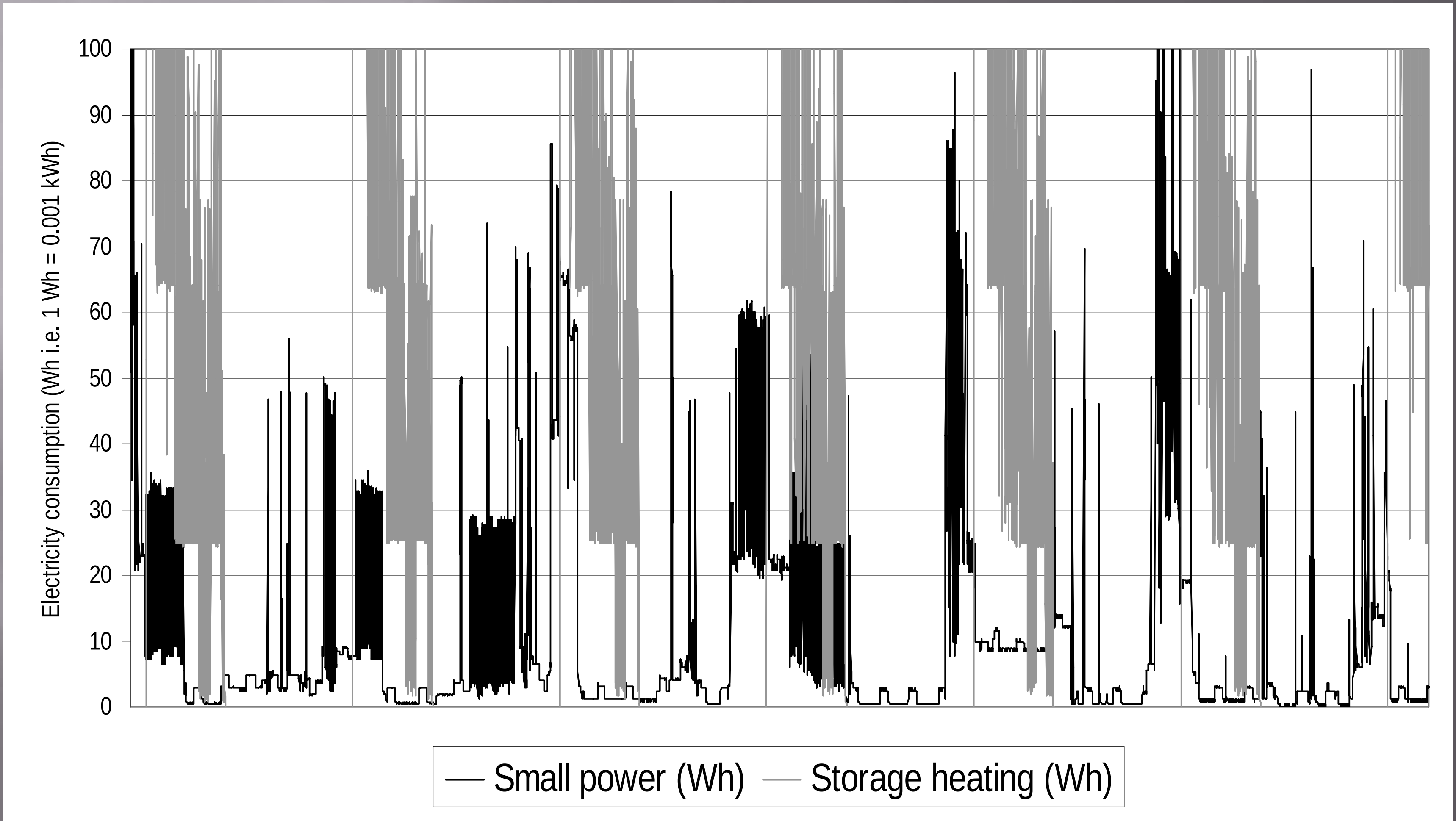
# Power of One Street – Tips & Feedback(2007/08)

-Annualised energy and fuel consumption + $CO_2$ emissions
- multiple fuel measurements
- room temperatures *(relative to external temperature)*
- logbooks and direct feedback to coaches
- annualised on basis of adapted heating degree day equation



# Power of One Street – Tips & Feedback(2007/08)

-Patterns of electrical consumption
- based on daily average kWh
- logbooks and coaching feedback

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# Power of One Street – Overall results (2007/08)


| Participants | Annual Saving | Total $CO_2$ reduction | Total energy reduction |
|---|---|---|---|
| Brennan family | €793 | 3.2 tonnes | 21.2% |
| Watterson family | €282 | 1.3 tonnes | 18.8% |
| Horler family | €832 | 3.6 tonnes | 17.6% |
| Conway family | €394 | 1.9 tonnes | 25.2% |
| Joyce family | €389 | 1.9 tonnes | 21.4% |
| Ratoath GAA Club | €295 | 2.75 tonnes | 13.3% |
| Cork School | €1750 | 8.1 tonnes | 18.5% |
| Heffernan family | €763 | 3.68 tonnes | 18.8% |
| Carroll/Cassidy family | €352 | 1.82 tonnes | 20.2% |
| Davies family | €424 | 1.90 tonnes | 20.5% |
| Gleeson family | €543 | 3.92 tonnes | 22.4% |
| Crowley family | €493 | 2.67 tonnes | 16.2% |
| Heery family | €328 | 1.78 tonnes | 14.4% |
| Meehan family | €920 | 3.24 tonnes | 26.7% |
| McCabe family | €519 | 3.32 tonnes | 15.3% |

# Power of One Street – Key issues (2007/08)

## Positive:

-Feedback was effective in establishing reality with participants, explaining answers to questions and identifying 'low hanging fruit...'

-High level of participant engagement and commitment *(driven by energy coach)*

-Almost all participants enjoyed media exposure

-Some participants were eager to establish competition

-Almost all participants have made some fundamental changes to their behavioural habits

-Multiple feedback metrics *(kWh, Euro, $CO_2$)*

-High level of mass media exposure/interest:

- radio interviews
- segments in established TV series 'About the house'
- newspaper articles
- regular coverage on national RTE 6.1 News

## Negative:

-Inconsistent use and quality of recordings in logbooks

-Participant fatigue sets in when a drop in contact with organisers *(e.g. last challenge...)*

-Labour intensive *(downloading and analysis of data)*

-Confusion with generic tips...

-Bounce-back

# RTE *"My family aren't wasters..."* (2007/08)

*www.rte.ie/tv/wasters/*

-Listowel, Co. Kerry

-Family of 4, 3 bed house built 1994, oil central heating, combi-boiler, standard appliances

-Dublin city

-Family of 7, 7 bed house renovated 2002, gas central heating, swimming pool, standard appliances, courtyard lights

-2 households
-Reality-based
-4 green living challenges *(5 days each)*
- Non-electric energy
- Electrical energy
- Transport
- Waste

-Target driven
-Competition, not directly between families
-Scene setting 'Energy Lockdown'
-No tips, interim progress only
-Prizes

# RTE *"My family aren't wasters..." - Challenges* (2007/08)

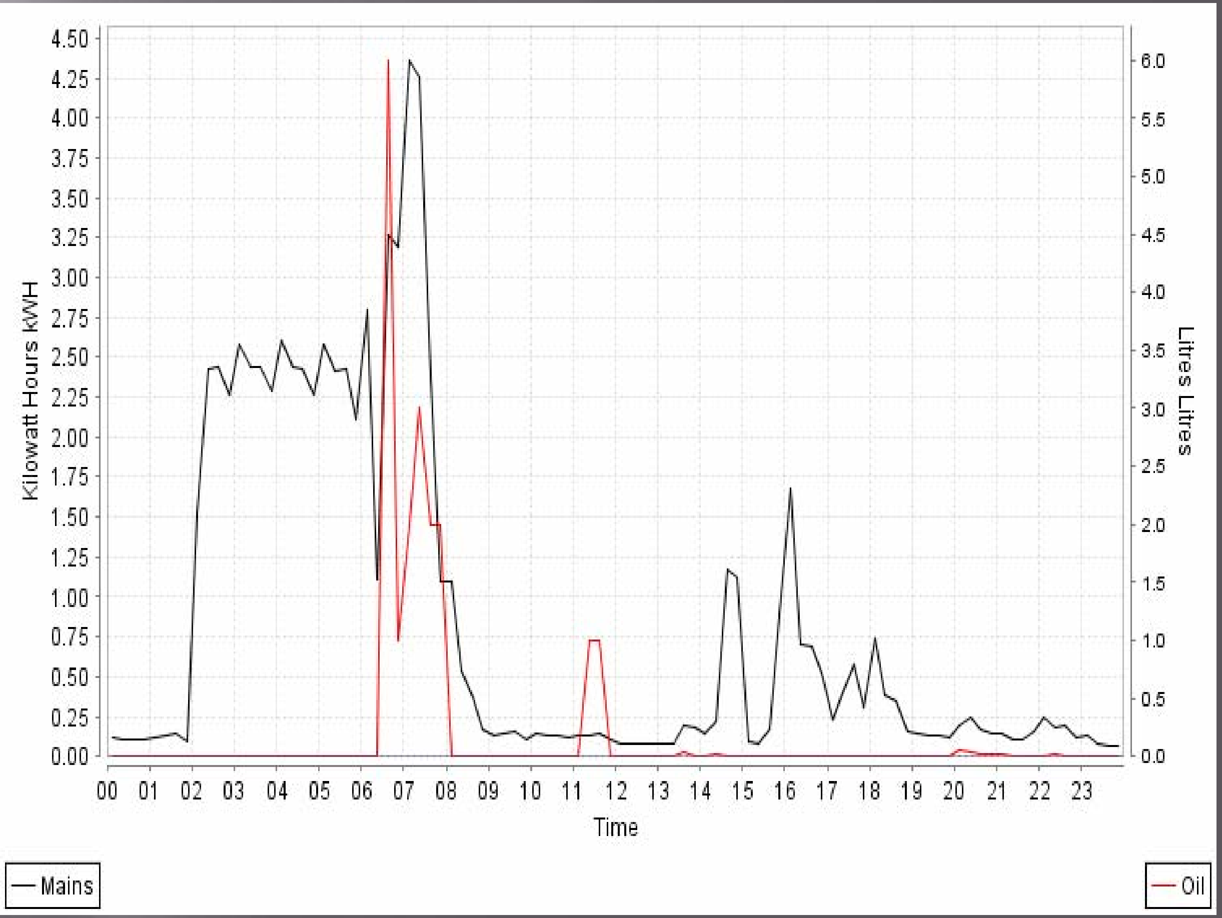
*www.rte.ie/tv/wasters/*

| Challenge | Co Kerry | Dublin city |
|---|---|---|
| Electric | Target = 60%<br>Result = 64% | Target = 70%<br>Result = 72% |
| Non-electric | Target = 25%<br>Result = 30% | Target = 40%<br>Result = 44% |
| Transport | Target = 75%<br>Result = 87.5% | Target = 38%<br>Result = failed |
| Waste | Target = 50%<br>Result = 87.5% | Target = 50%<br>Result = 87.5% |

# RTE *“My family aren’t wasters...” - Preparation* (2007/08)

*www.rte.ie/tv/wasters/*

- Baseline characterisation
- Energy survey & appliance audit
- Electric and fuel bills
- Discussion of routines etc.
- Target setting



# RTE *“My family aren’t wasters...” - Results*(2007/08)

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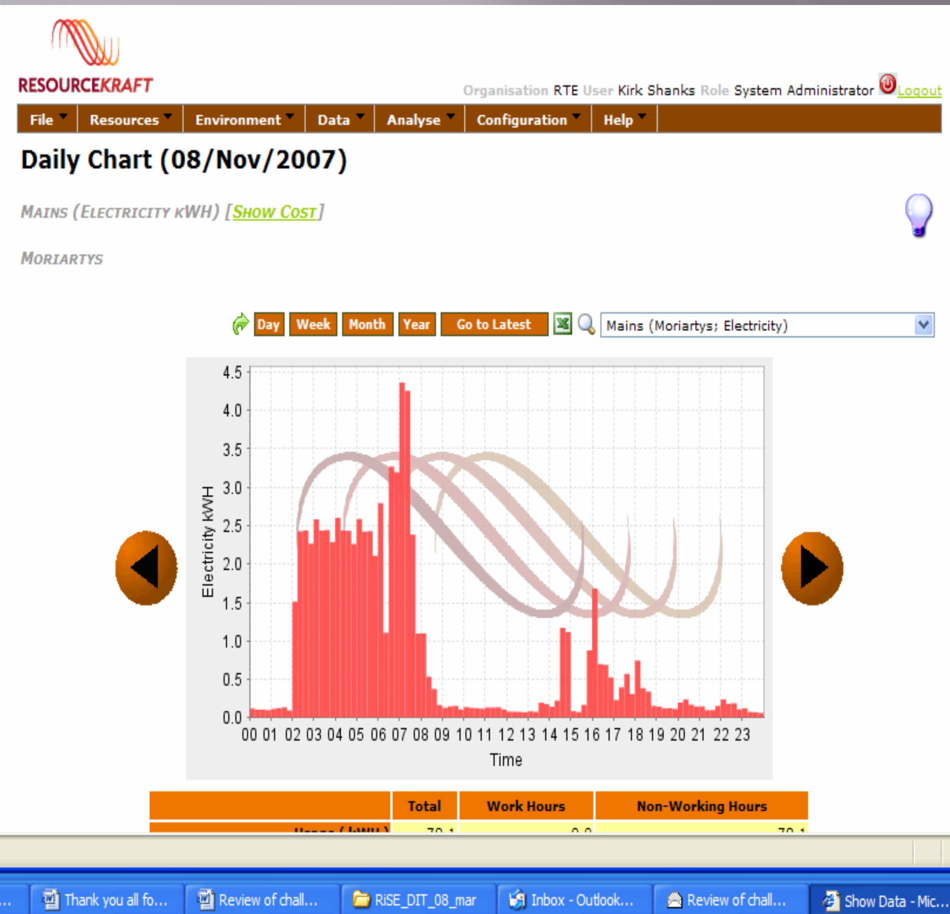


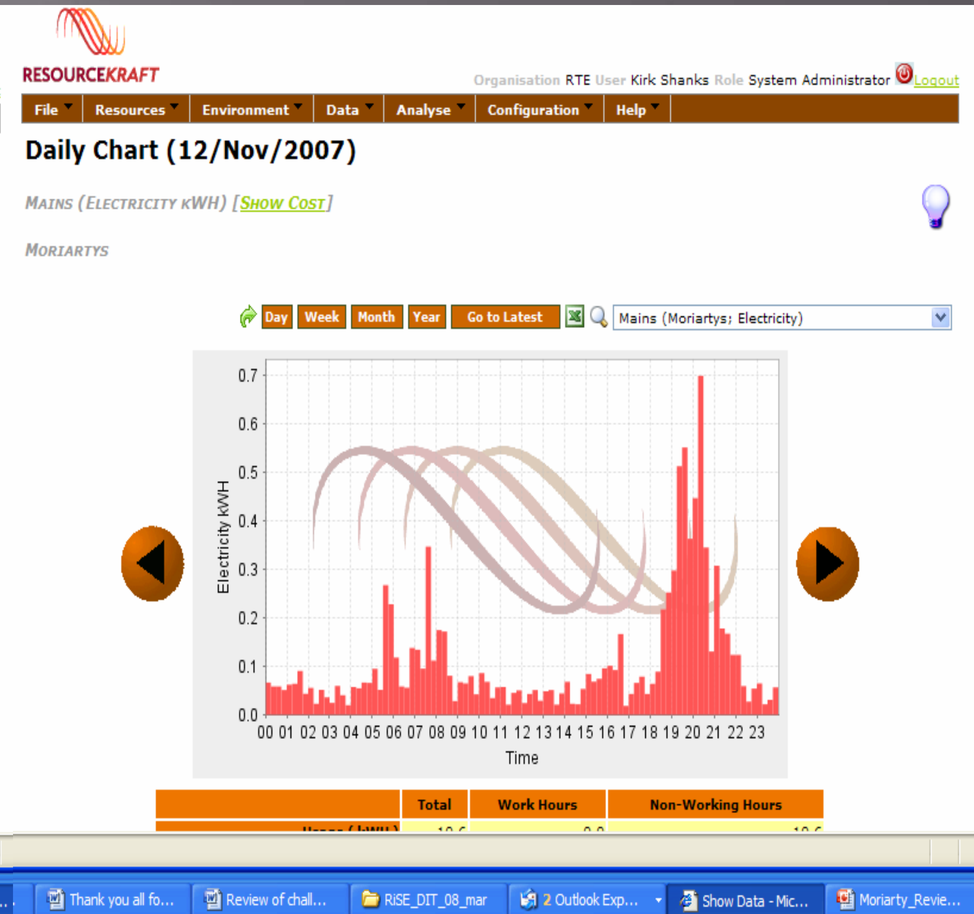


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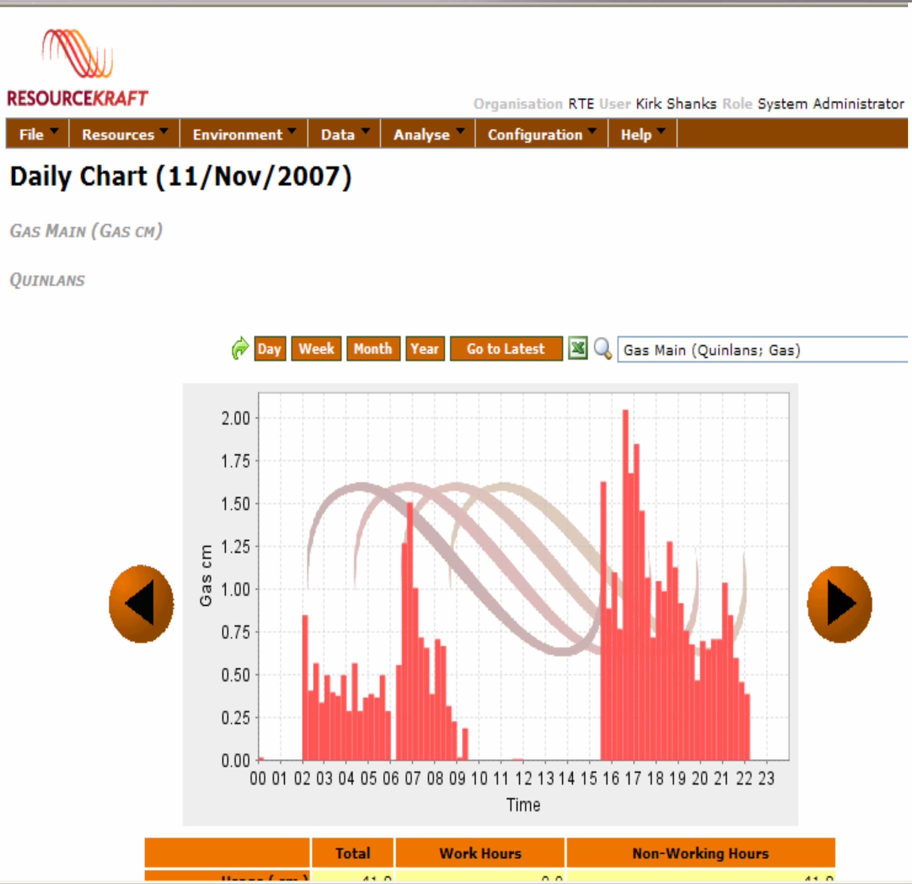


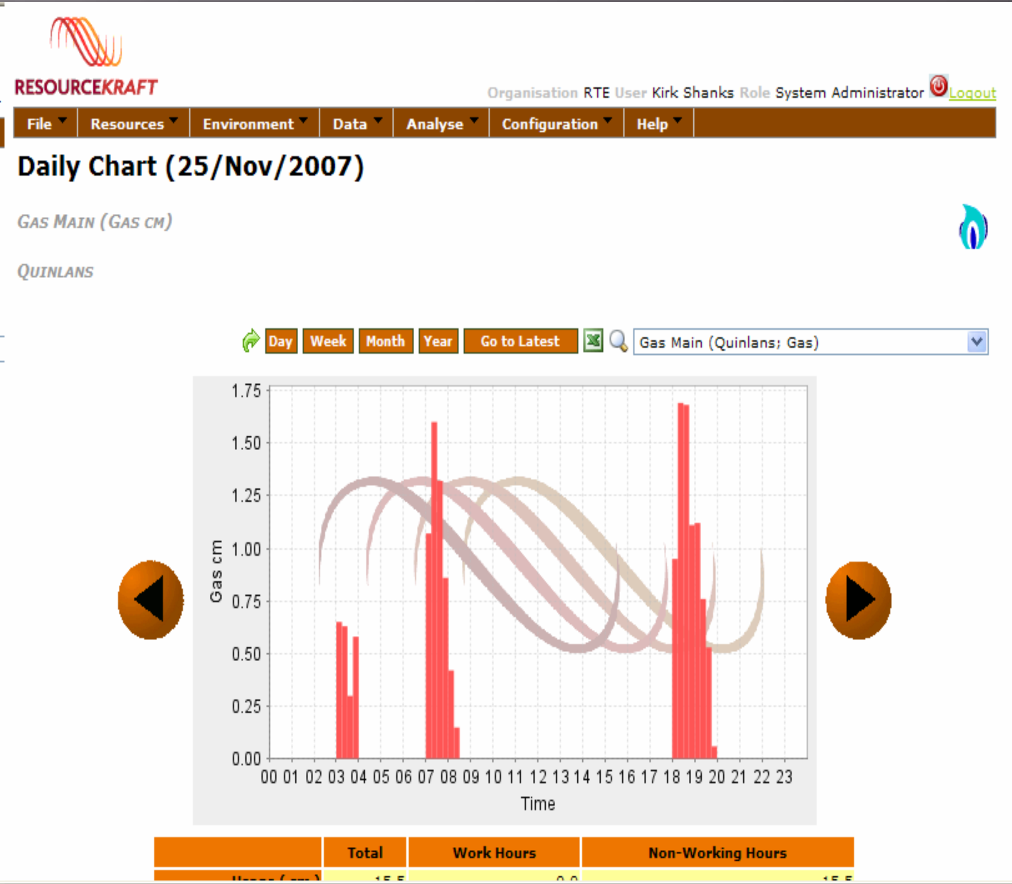

# RTE *"My family aren't wasters..." – Key issues*

## Positive:

-Competition was effective short-term motivator, though reticence from some initially...
-Some fundamental changes were sustained up to 3 months after challenges
-Strategy of challenging participants to find out for themselves
-Significant viewer interest *(21 – 28% of viewers)*
-High accuracy of energy related feedback
-Short challenges easier to focus on and drive self-learning
-Media exposure supported ongoing positive engagement with greener living

## Negative:

-Expensive monitoring infrastructure
-Participant disappointment when unsuccessful
-Short-term challenges allowed stoppage that could not be sustained

# Interventions - scalability

-Feedback

- tailoring needs site specific information/data
- monitoring needs sufficient resolution to pick up subtle changes

-Competition

- participant expectations
- prizes
- transparency

-Media interest