

Storage & SO Costs

Gas TCMF

6th November 2007

(Updated for 5th February 2008)

Introduction

- ◆ This presentation covers analysis of SO costs in relation to a potential SO Storage Commodity Charge (As proposed by GCM03 and subsequently vetoed)
- ◆ This analysis covers those costs incurred on a daily basis and hence those costs that can be directly compared with on the day storage utilisation

SO Cost Components

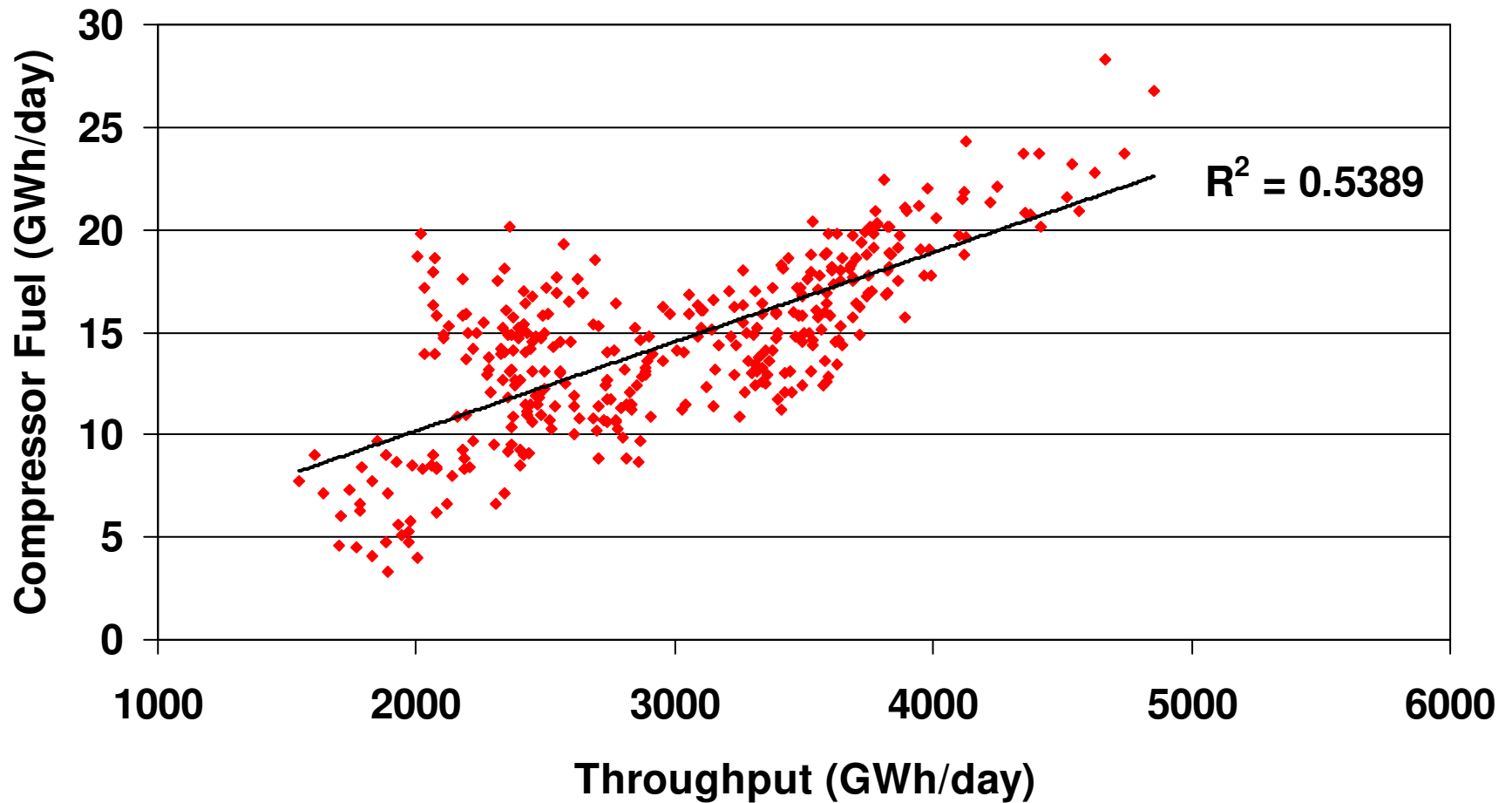
- ◆ Daily Costs
 - ◆ Shrinkage: Own Use Gas (OUG) = Compressor fuel
 - ◆ Shrinkage: Un-accounted for Gas (UAG)
- ◆ Annual Costs
 - ◆ Operating Margins
 - ◆ Constrained LNG (CLNG)
 - ◆ Deemed Interruption.
 - ◆ Internal Costs
 - ◆ Outcome of Incentive Schemes
 - ◆ Under or over-recovery from previous year ('K')

UPDATE

- ◆ This presentation has been updated to exclude the shrinkage costs associated with St Fergus compression as there is a separate St Fergus compression charge.
- ◆ The previous analysis has been retained and equivalent updated analysis, based on compressor fuel excluding St Fergus fuel, has been added for comparison

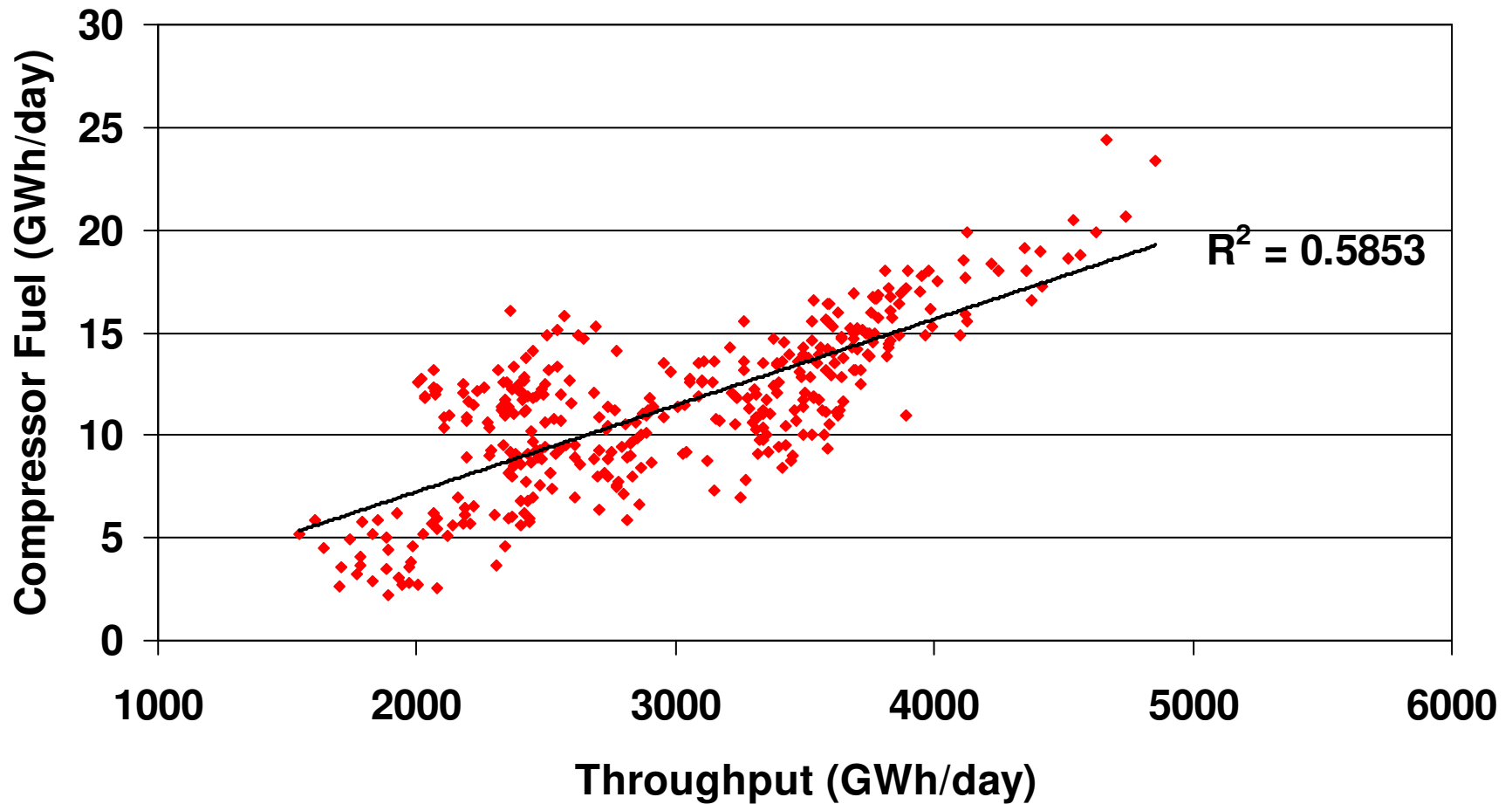
OUG (Compression) v Throughput

(April 2006 to March 2007)



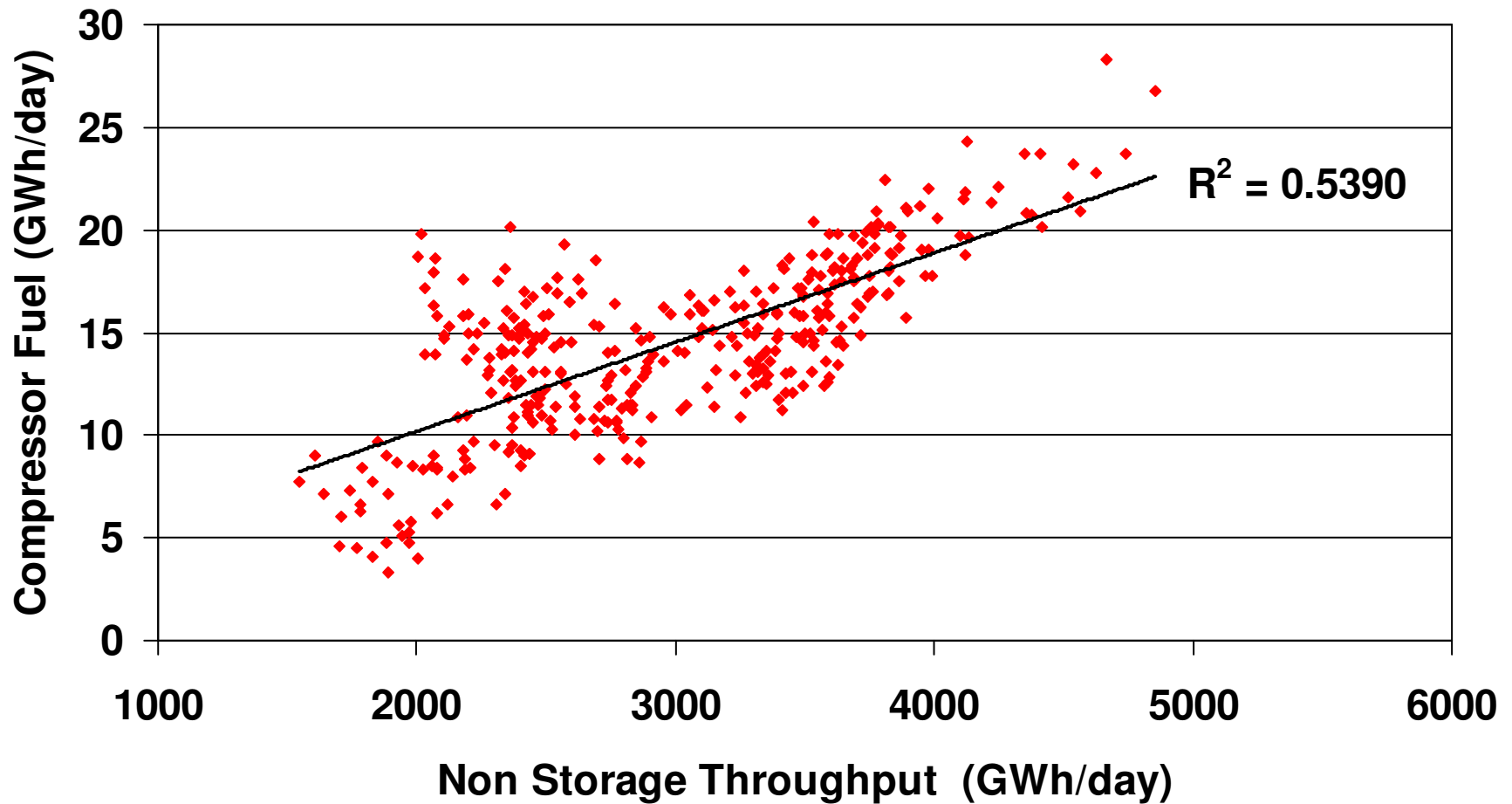
OUG (Compression excl. SF) v Throughput

(April 2006 to March 2007)



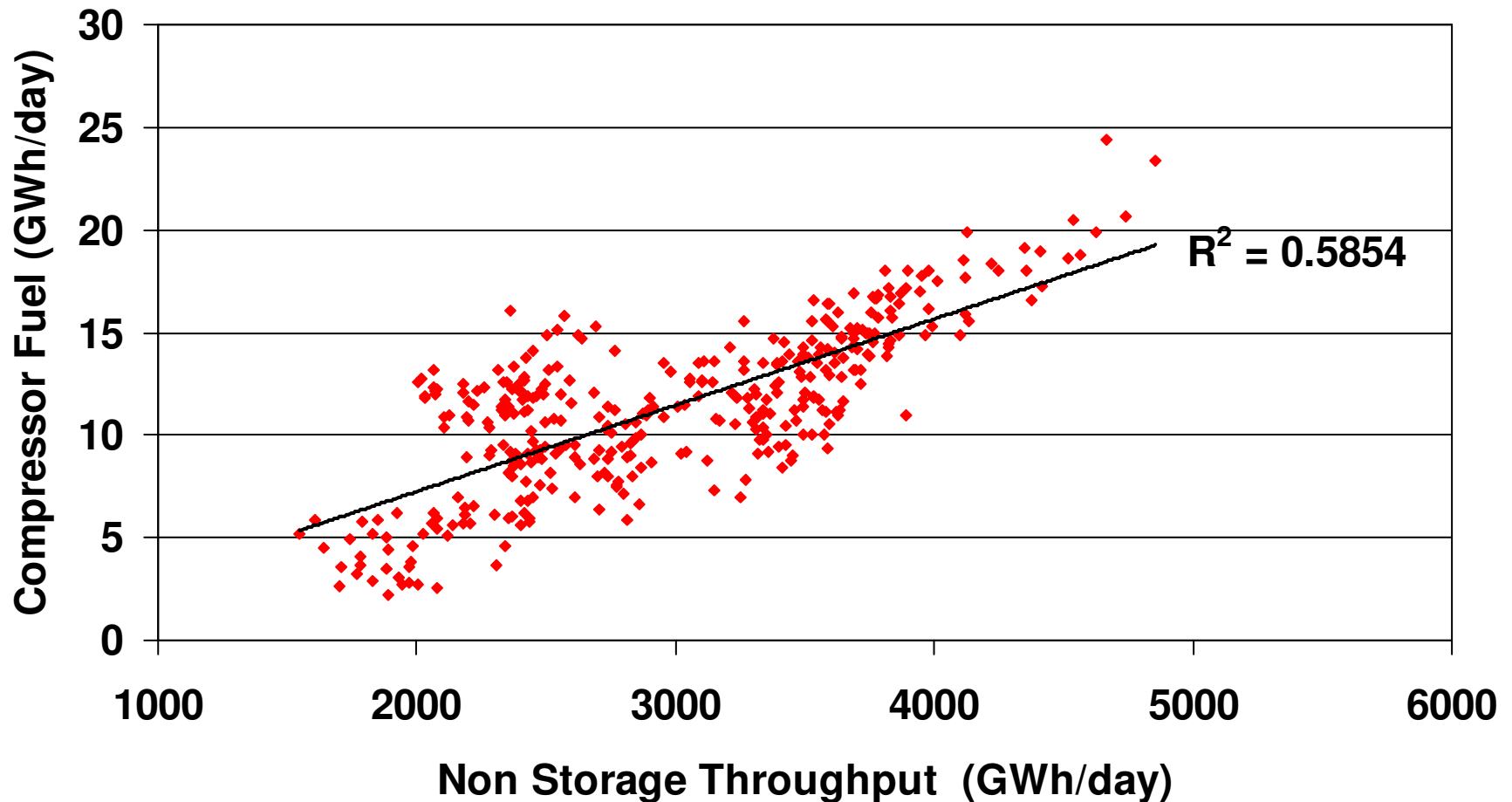
OUG (Compression) v Throughput (excluding Storage)

(April 2006 to March 2007)



OUG (Compression excl. SF) v Throughput (excluding Storage)

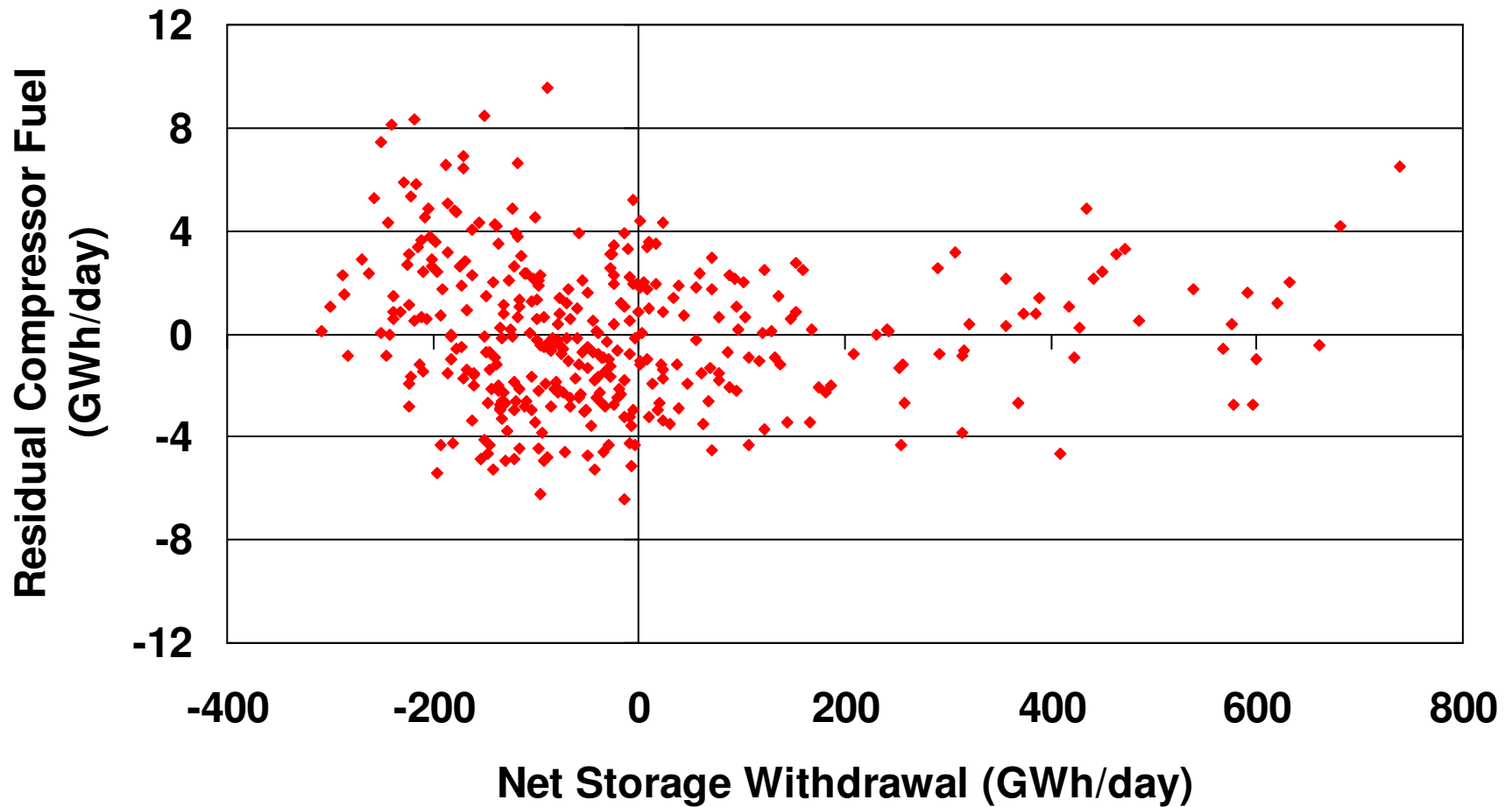
(April 2006 to March 2007)



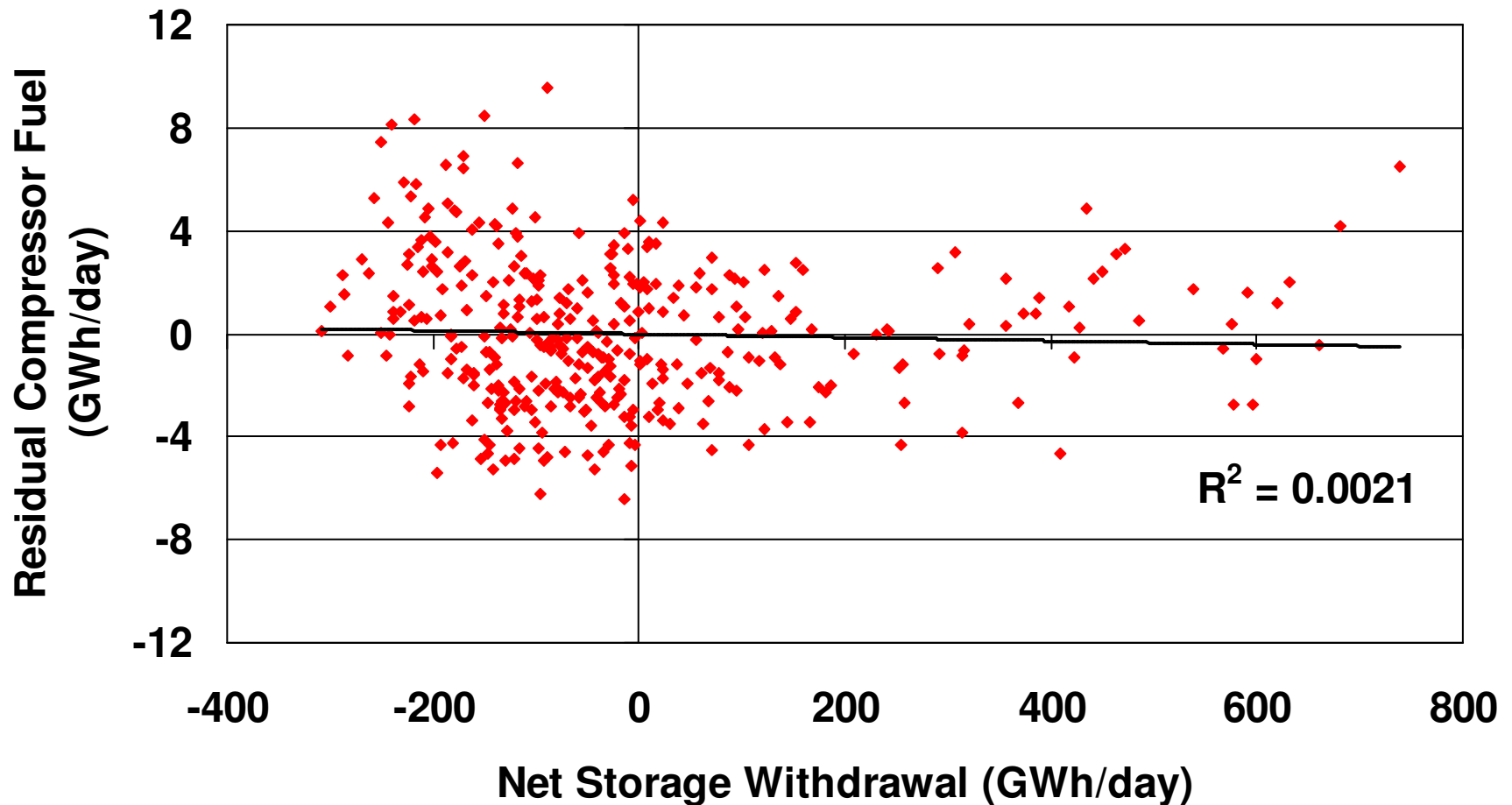
Discussion

- ◆ Clearly there is a relationship between Throughput and Compressor fuel (OUG)
- ◆ We can remove the impact of throughput by fitting a linear model and looking at the residuals
 - ◆ If compressor fuel increased with storage withdrawal we would expect to see a **positive** relationship
 - ◆ If compressor fuel decreased with storage withdrawal we would expect to see a **negative** relationship
 - ◆ If compressor fuel was not linked to storage withdrawal we would expect to see **no** relationship

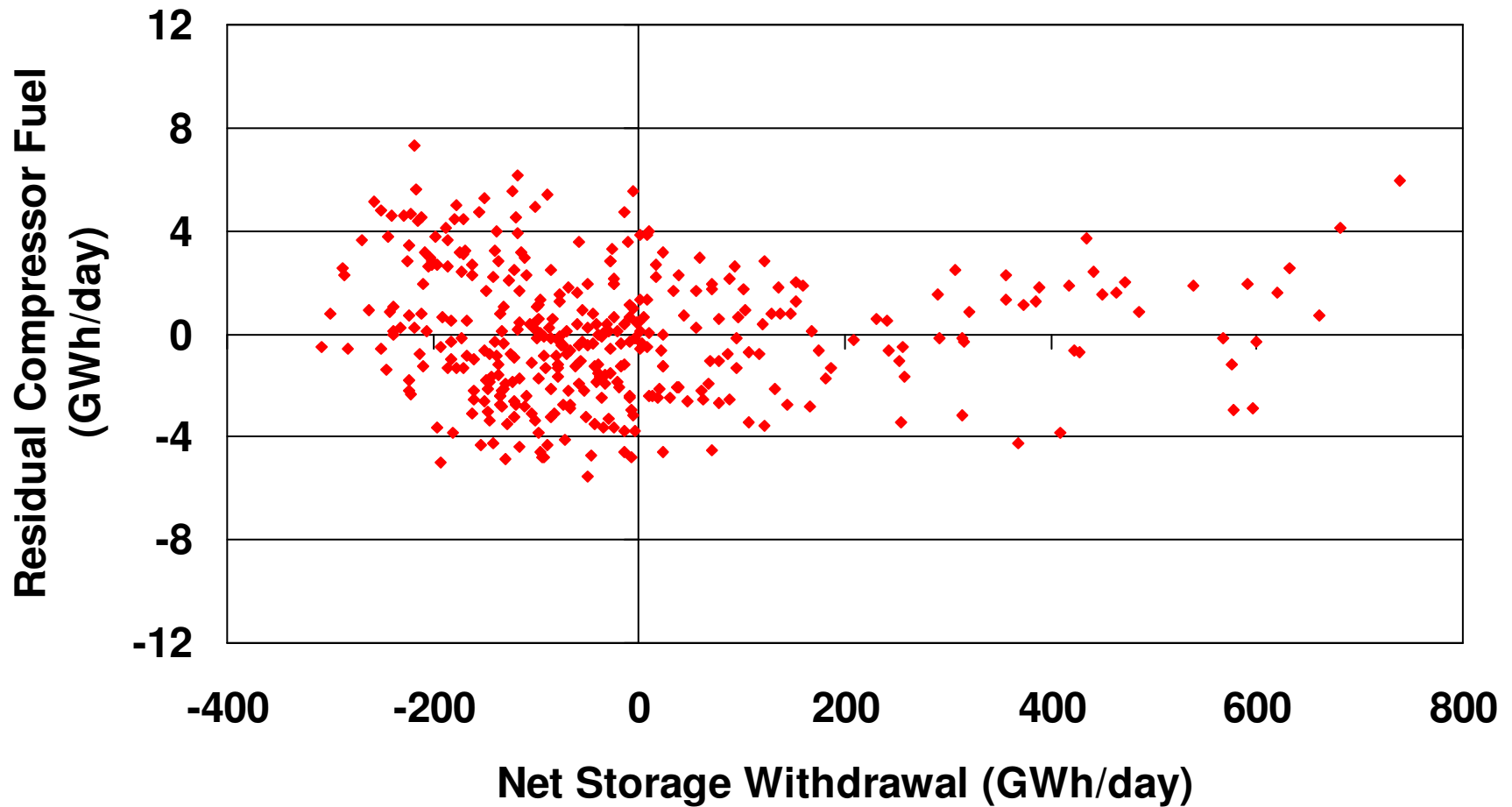
Residual OUG (Compression) v Storage Throughput (April 2006 to March 2007)



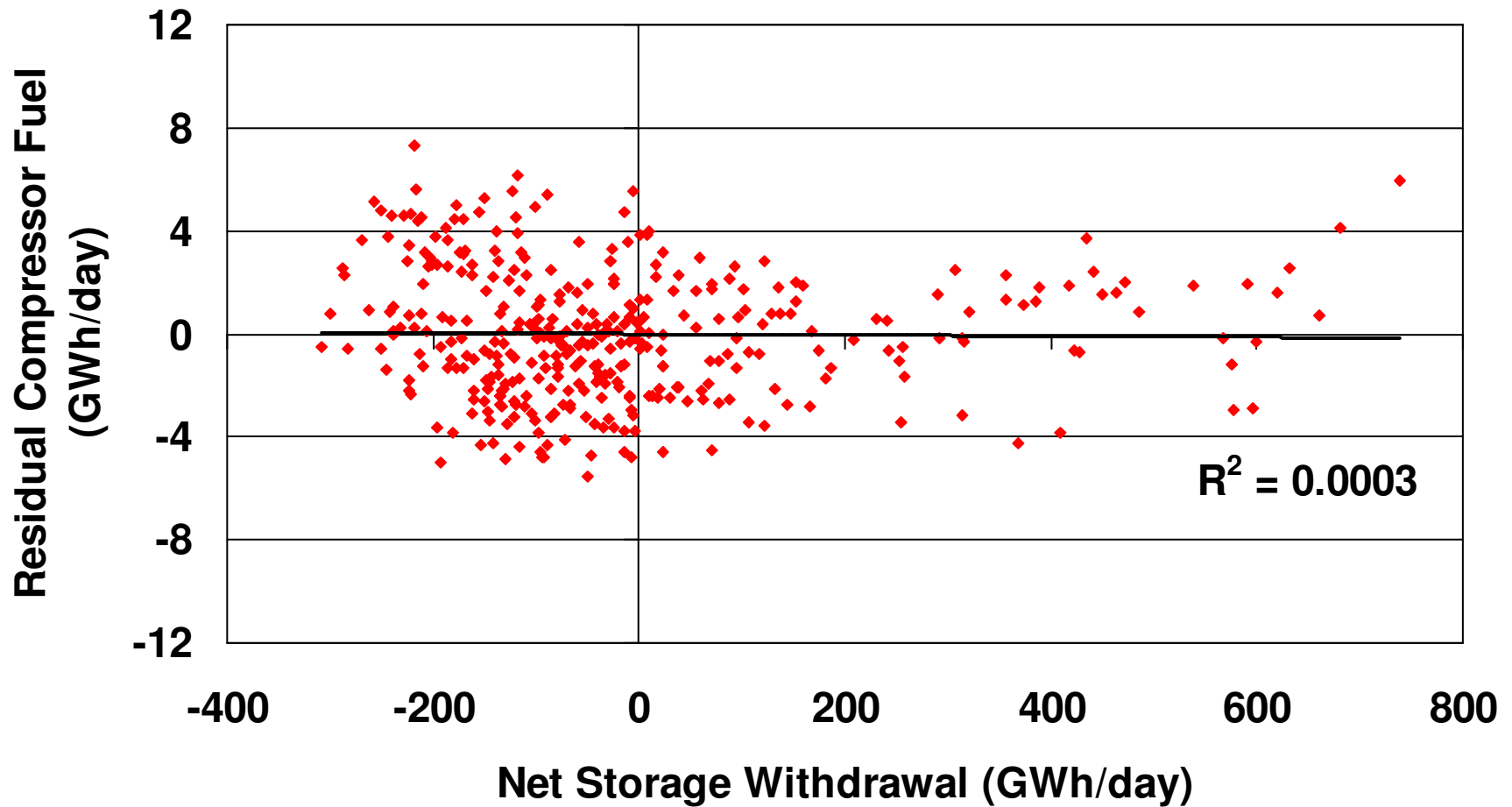
Residual OUG (Compression) v Storage Throughput (April 2006 to March 2007)



Residual OUG (Compression excl. SF) v Storage Throughput (April 2006 to March 2007)

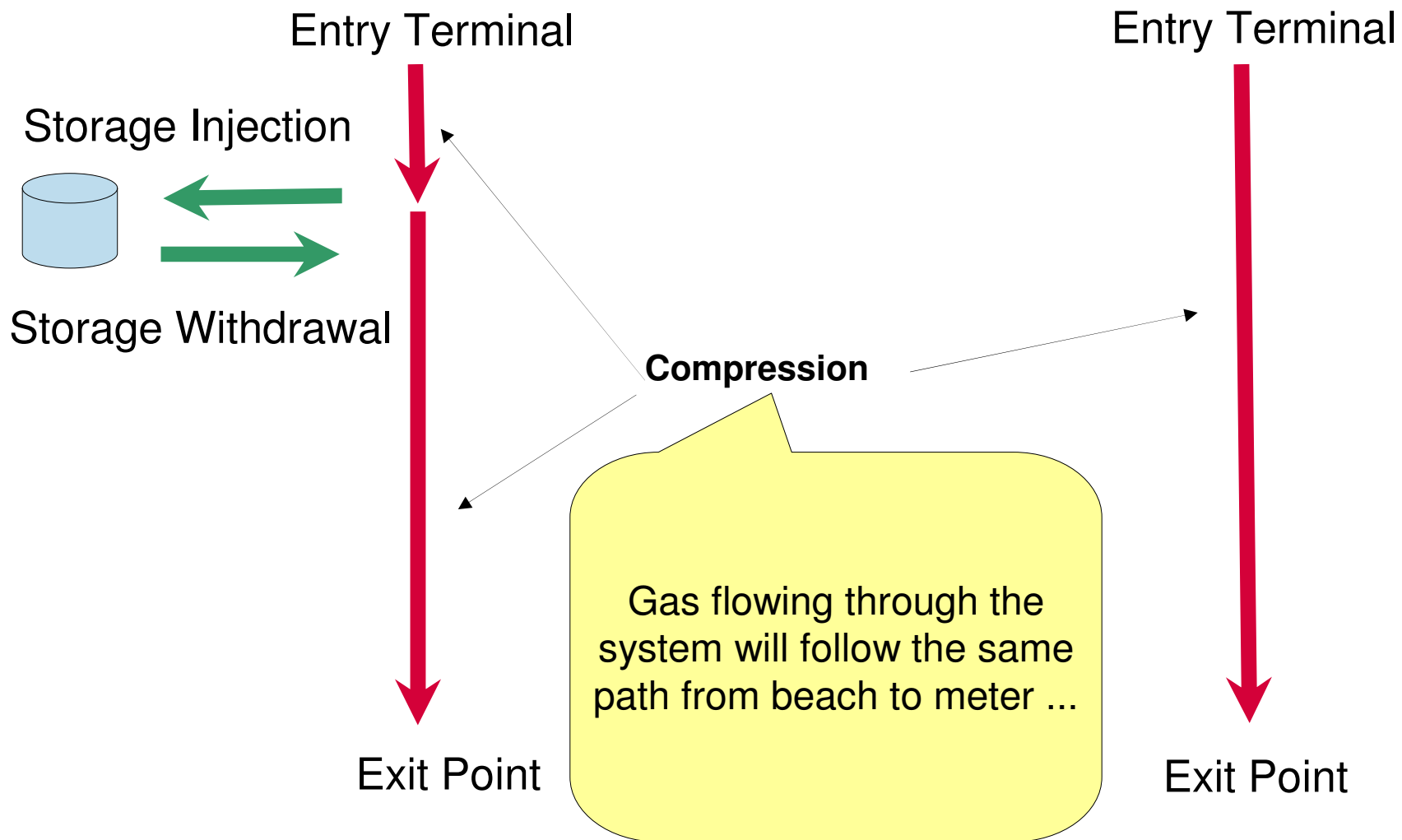


Residual OUG (Compression excl. SF) v Storage Throughput (April 2006 to March 2007)

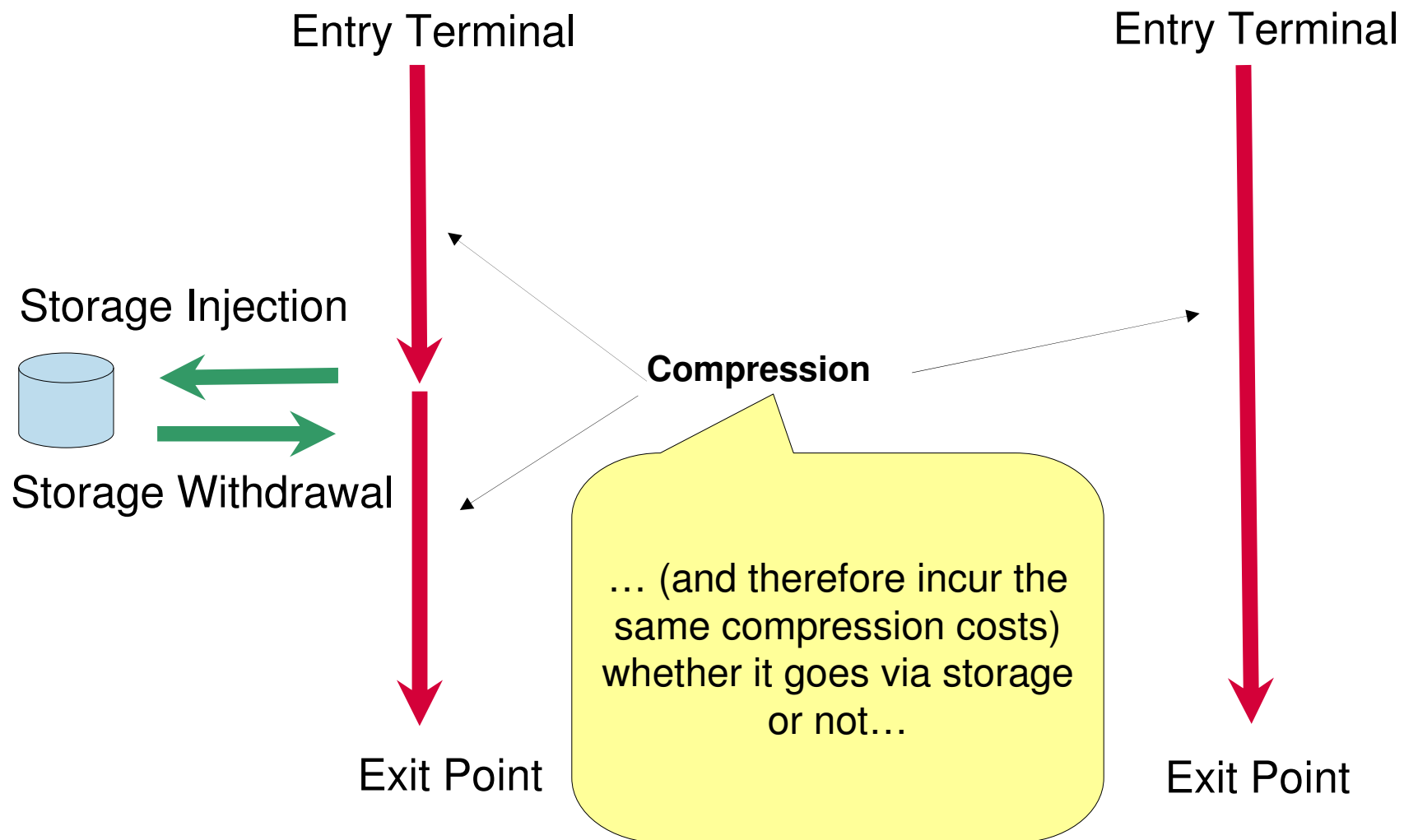


Why is this the case?

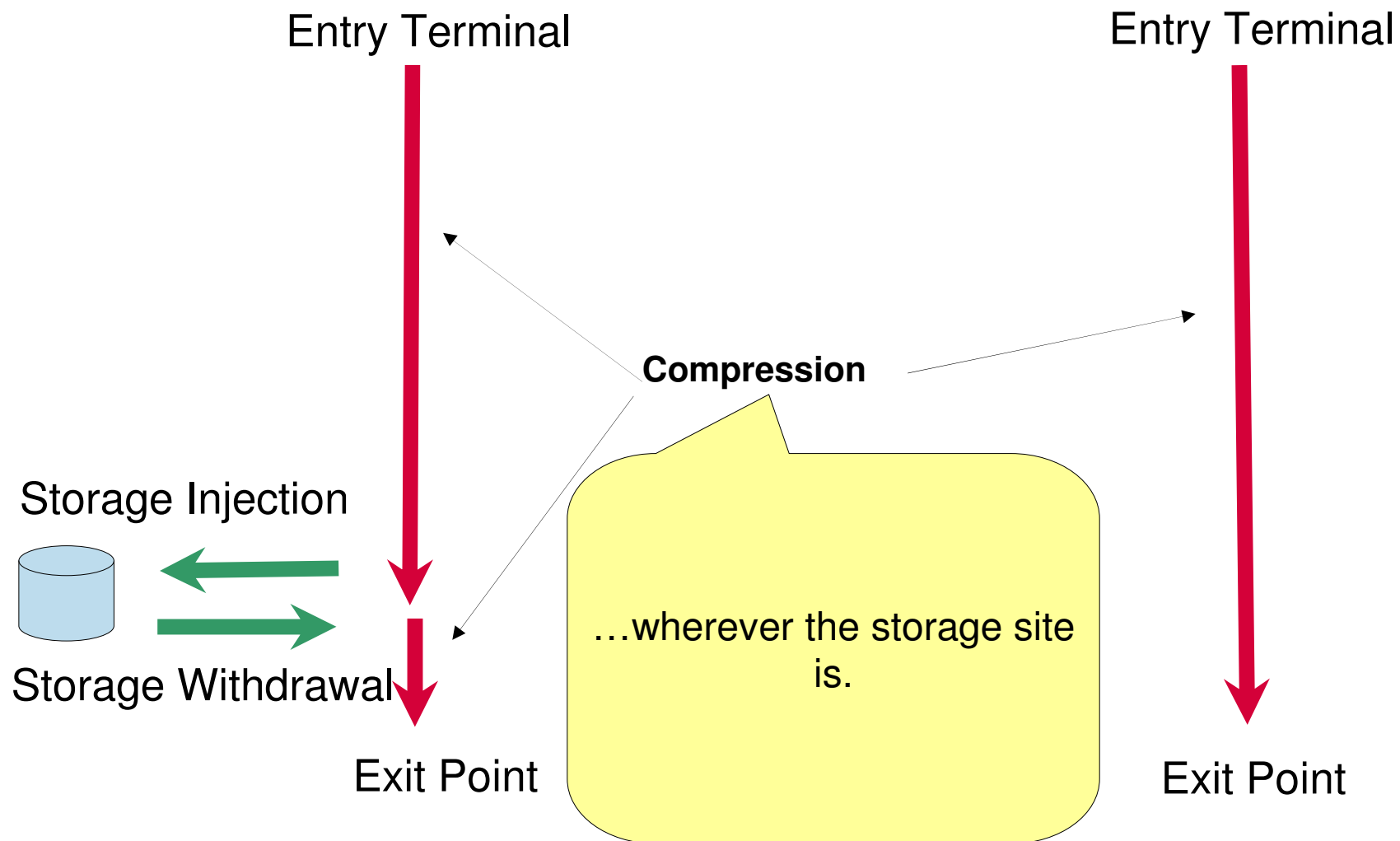
Compression (OUG) & Storage (1)



Compression (OUG) & Storage (2)



Compression (OUG) & Storage (3)

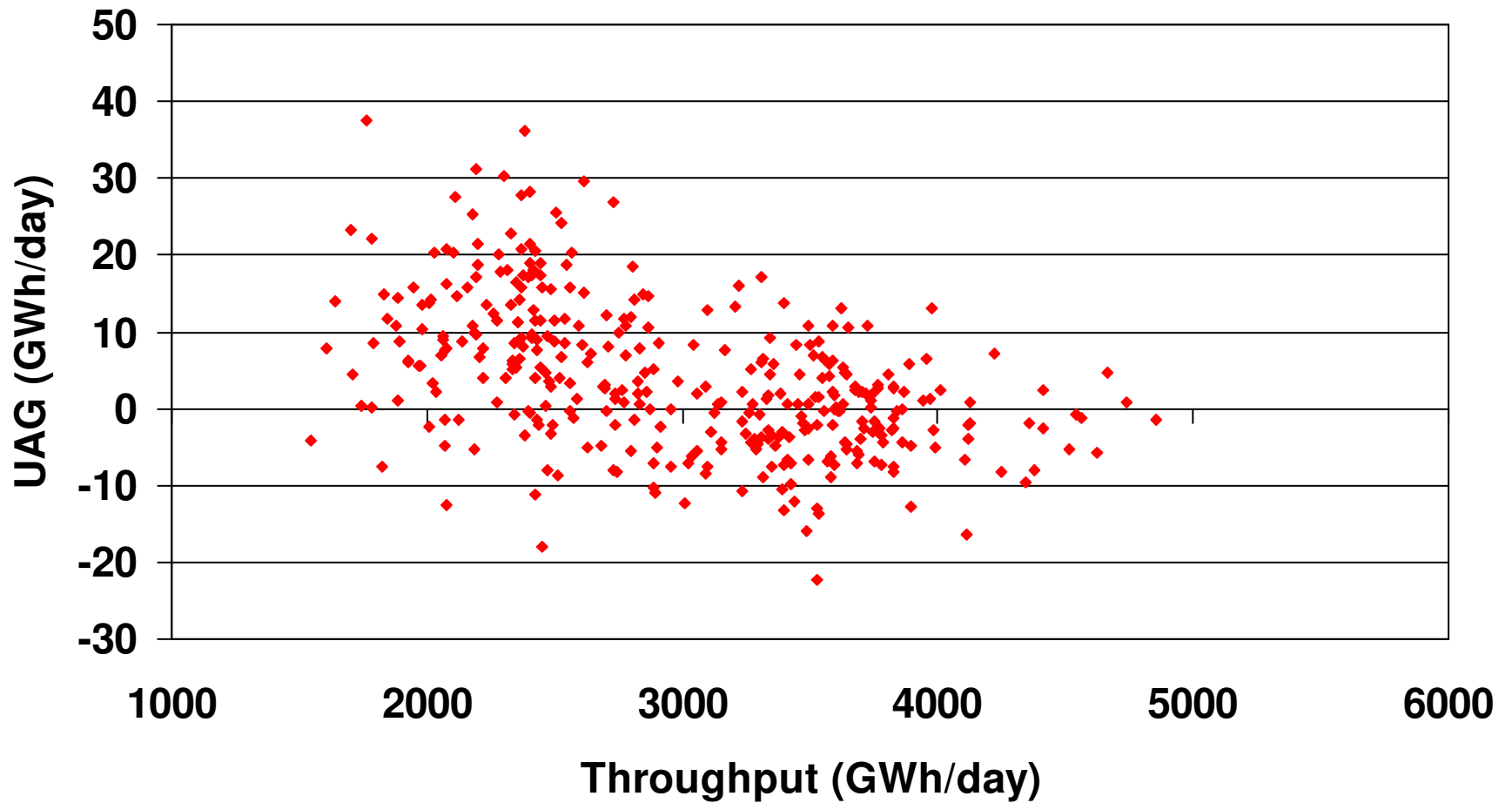


Shrinkage (UAG)

- ◆ Unaccounted for Shrinkage Gas is thought to be largely meter error
 - ◆ It has been argued that any meter error at storage sites would have no annual impact as injection errors would be cancelled out by withdrawal errors
- ◆ If this was not the case
 - ◆ the volume of gas held in storage (which is published) would not agree with in the 'inputs' and 'outputs'
 - ◆ There would be an unexplainable increase or decrease in storage stock

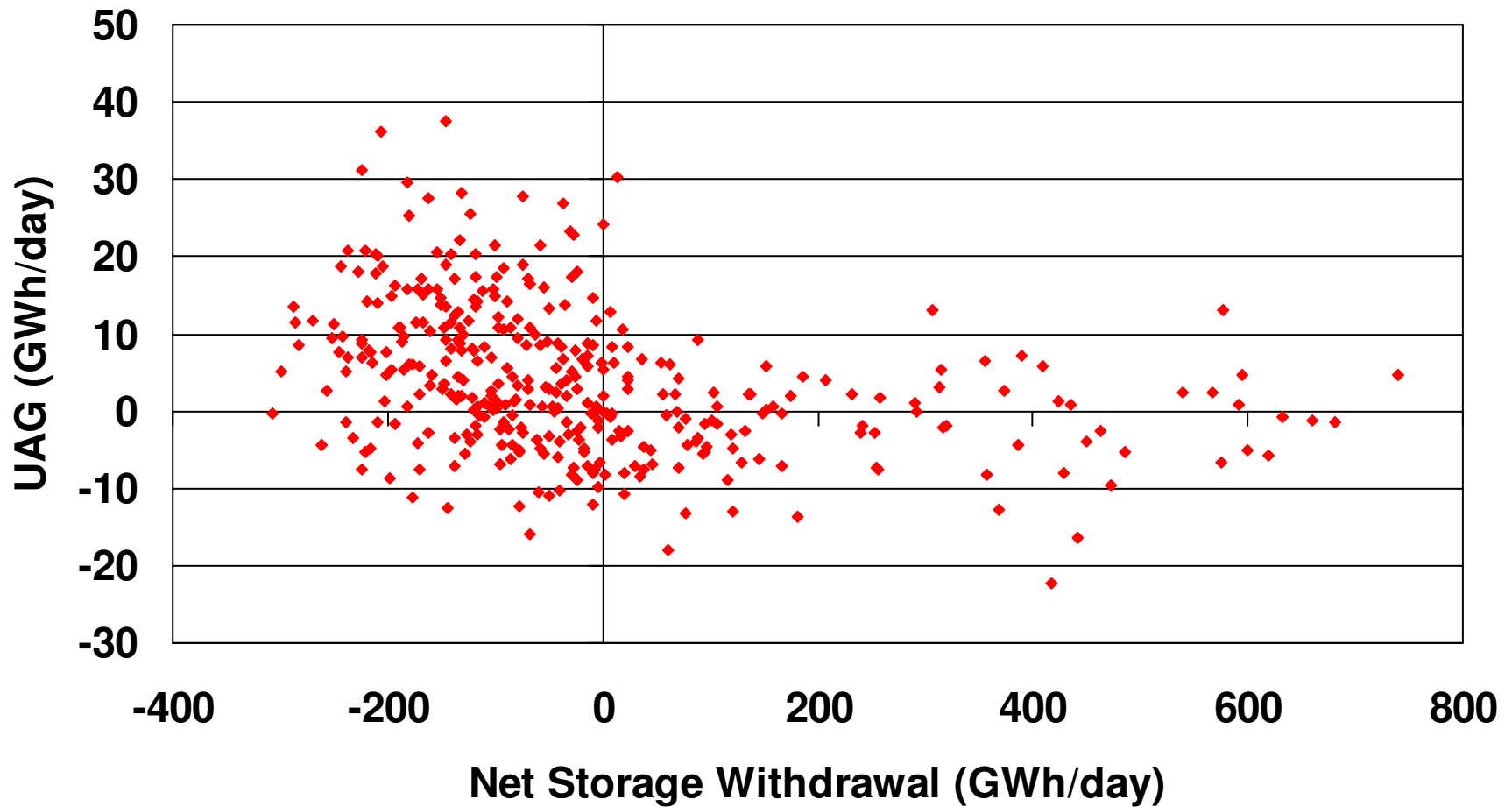
UAG v Throughput

(April 2006 to March 2007)



UAG v Storage Throughput

(April 2006 to March 2007)



Conclusions

- ◆ No additional compressor usage as a result of storage injection & withdrawal
 - ◆ Including the cost within an SO Storage Commodity charge would therefore lead to double counting
- ◆ No positive relationship between UAG and throughput or storage flows;
 - ◆ Including the cost within an SO Storage Commodity charge could not be said to be cost reflective
 - ◆ Would including the cost within an SO Storage Commodity charge achieve the remaining charging relevant objectives e.g. promote competition?