


## Monitoring of the Energy Systems in Milton Keynes

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## Buildings

Mixed-use; residential, commercial & retail

City centre location

A major transport hub

A growing urban centre

## Energy systems

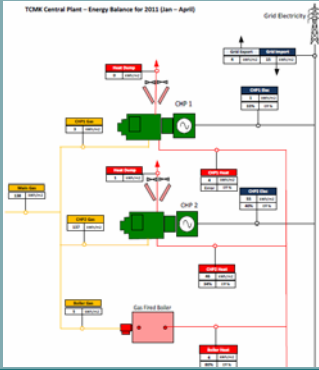

CHP energy centre

Electricity is sold to buildings through a private wire

Heat is sold to buildings through a heat network

Solar PV array being fitted to bus station

Building demand reduction measures

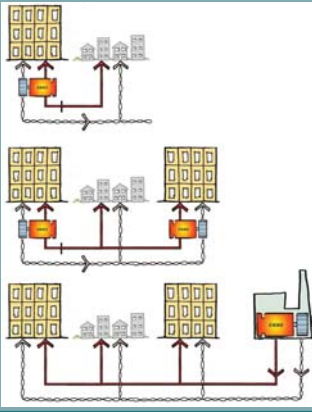

## Users

Private dwellings

Retailers

Commercial offices

The railway operator

## Characteristics

Different daily energy use patterns

Users have different price expectations

Some are more predictable than others



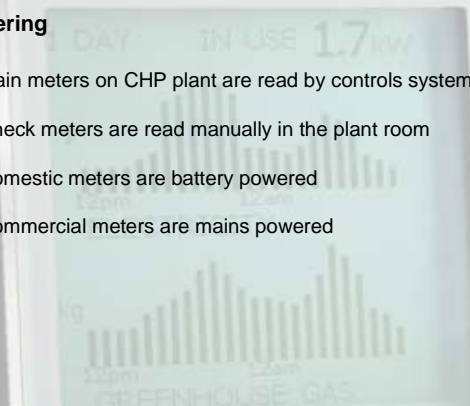


## Metering

Main meters on CHP plant are read by controls system

Check meters are read manually in the plant room

Domestic meters are battery powered

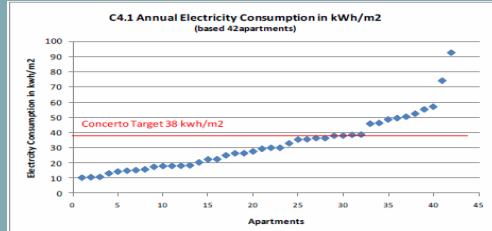
Commercial meters are mains powered

## Monitoring

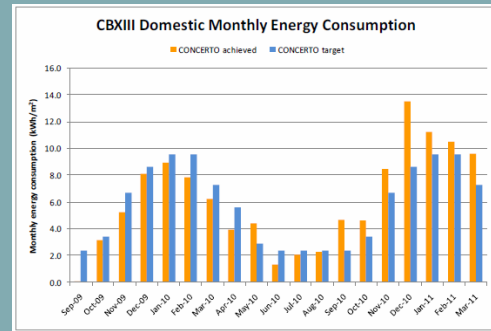
Detailed comparison to targets

Adjustment for weather and process loads



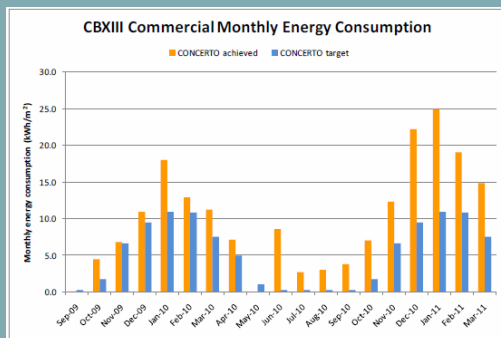
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## Monitoring of Performance - Domestic



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## Monitoring of Performance - Commercial



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## Losses

Losses from heat and power distribution are 9%

The infrastructure is not yet fully utilised

When more buildings are added, distribution losses will be less significant



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## Conclusions

Monitoring results have taken time to settle

Domestic use is better than target

Commercial use exceeds target

Overall, performance is good, with areas for improvement

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