



Settlement in a Smart World

An outline

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26 March 2011

» Settlement

- » A simple process made complex or a complex process made simple
- » The shape of the market - NHH / HH, now and with the DCC

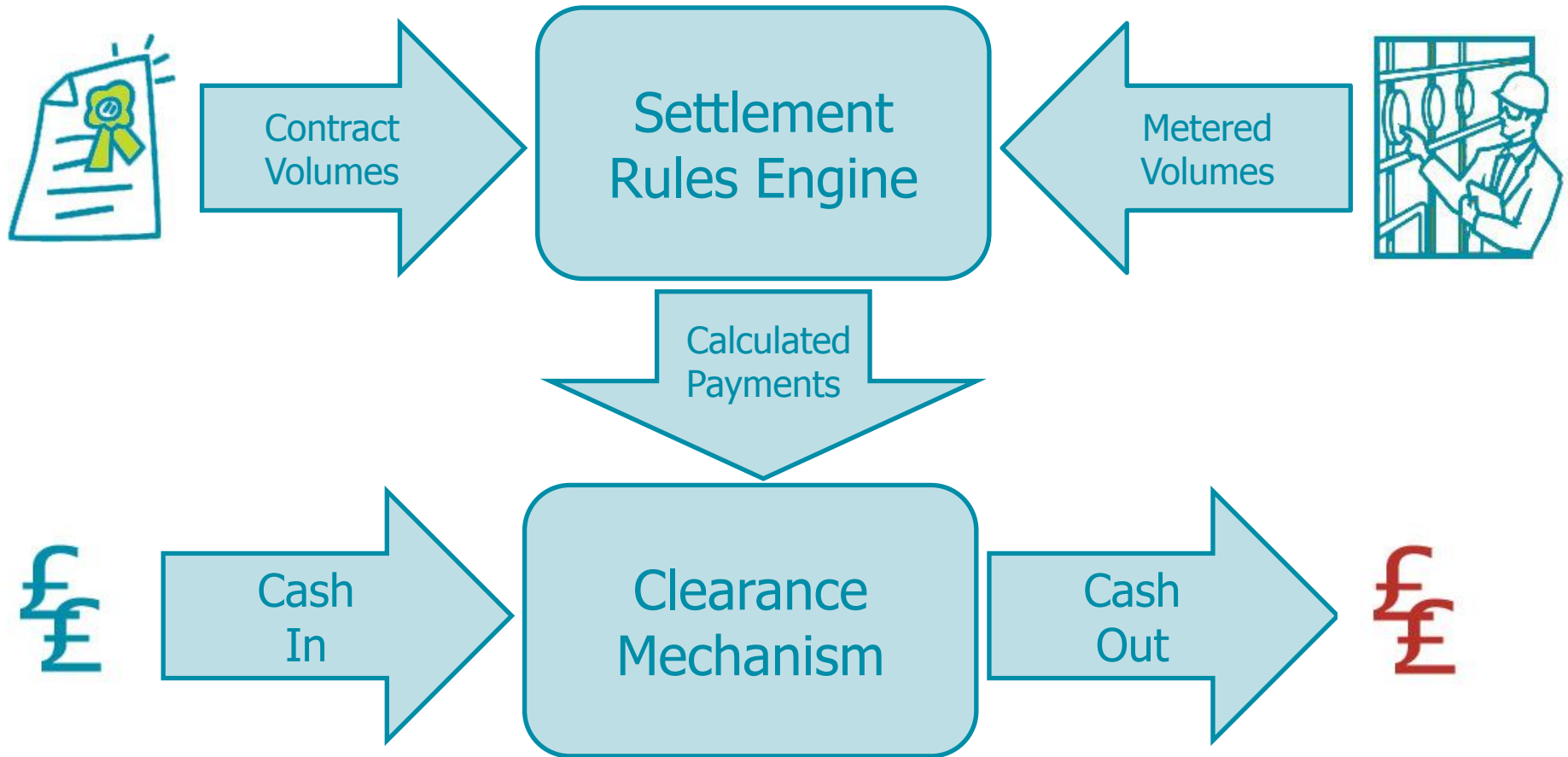
» Immediate Challenges

- » Changing consumer behaviour – supporting innovative tariffs

» Longer Term Challenges & Opportunities

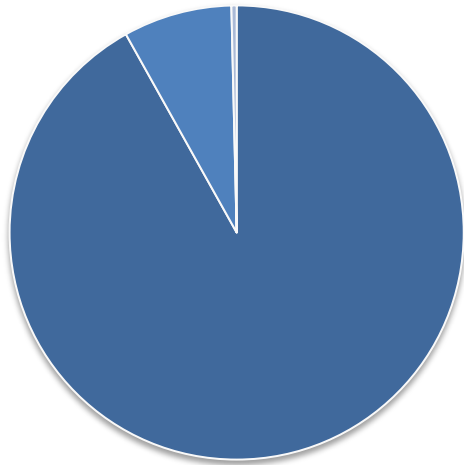
- » Demand-side participation – solving the unsolved?
- » Simplified Systems and Processes – if not now, when?

Settlement – A black art?



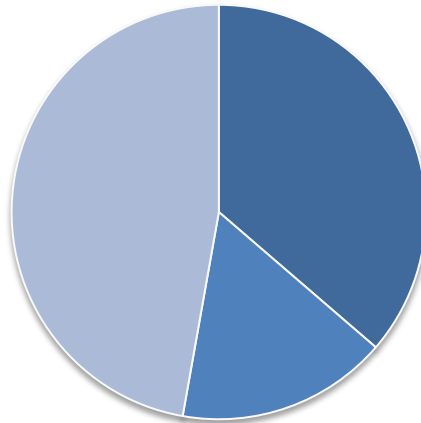
Settlement - Current Electricity Market

MPANs (x1000)



■ Dom - NHH	27,161
■ Non Dom - NHH	2,287
■ Non Dom - HH	110

Annualised Energy (TWh)



■ Dom - NHH	115
■ Non Dom - NHH	52
■ Non Dom - HH	150

Settlement – Possible DCC Service Usage

Dom - NHH



10%

Dom - NHH

45%

Dom – NHH - DCC

45%

Dom – HH -DCC

DCC

Non Dom - NHH



50%

Non Dom – HH - DCC

50%

Non Dom - HH

Non Dom - HH

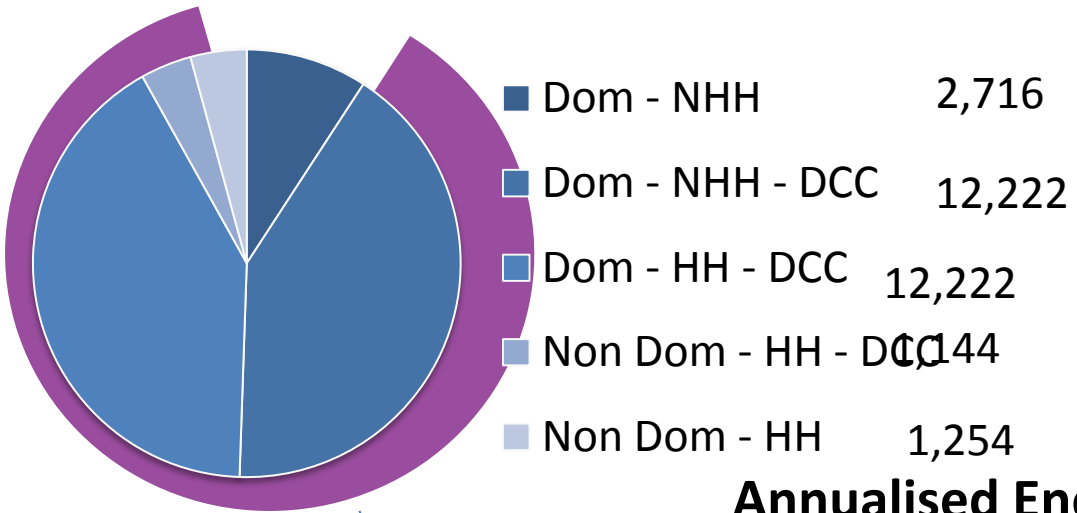


100%

Non Dom - HH

Settlement Smart World

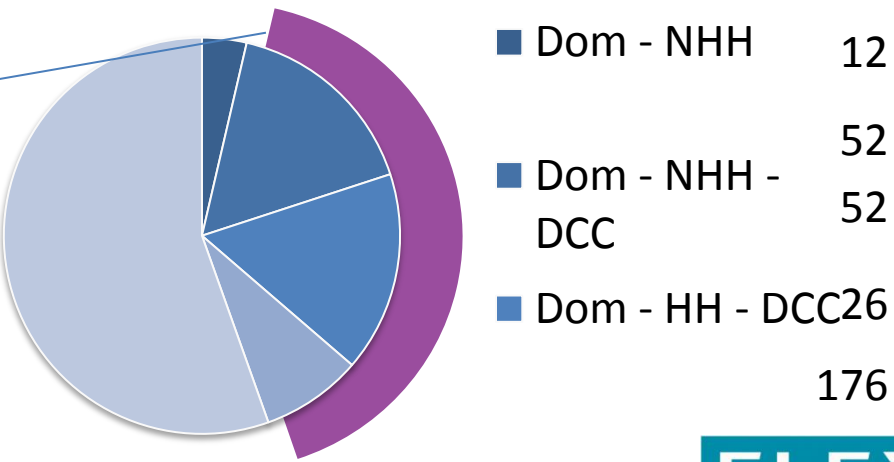
MPANs (x1000)



1. Will some domestic consumers remain outside the DCC services?
2. Will the DCC support both NHH & HH?

Annualised Energy (TWh)

DCC users



~ 60% of energy data collected outside the DCC



Immediate Challenges

SMART ISSUES

(Ensuring data integrity from the DCC services)

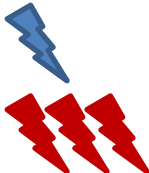
- 'Best of practice' SEC
- Optimisation with existing Codes
- Clear and simple business processes
- DCC incentivised to succeed

SETTLEMENT ISSUES

(Maintaining meter to bank integrity)

- DCC coverage – what and when
- Future of NHH Settlement
- Support for new tariffs
- Long transition – dumb to smart

Immediate Challenges Changing Consumer Behaviour



Normal Rate
Peak Rate

Customer



Innovative tariff

Behaviour

Supplier

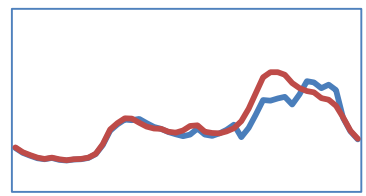
Meter



Cash

Consumption

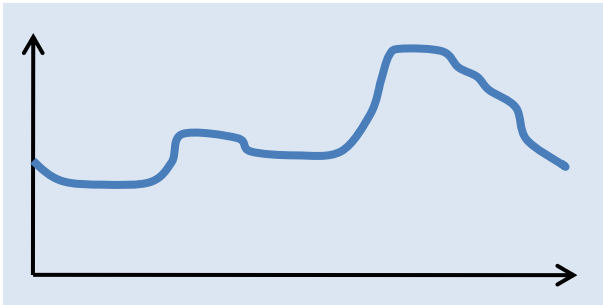
Settlement



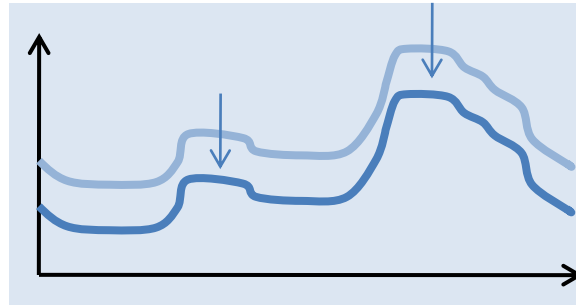
Immediate Challenges

Time of Use Tariffs (1)

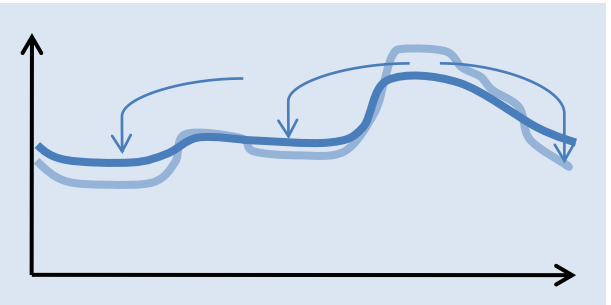
» The Aim



Consumers' consumption



Volume reduced

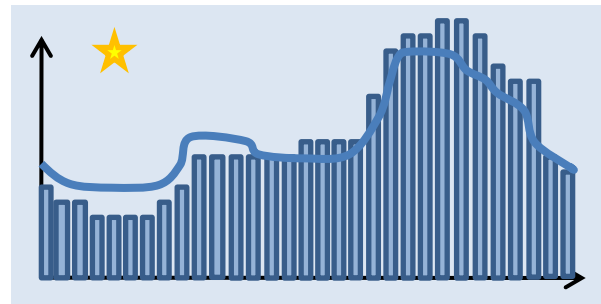


Shape smoothed

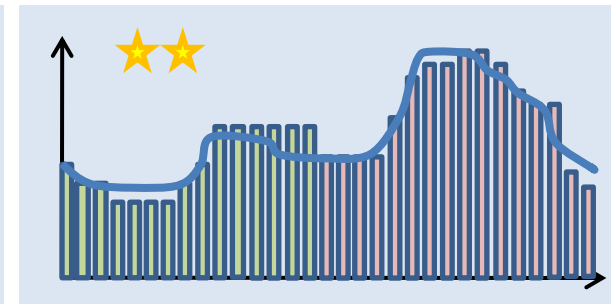
» NHH & HH Metering



HH – Consumer specific

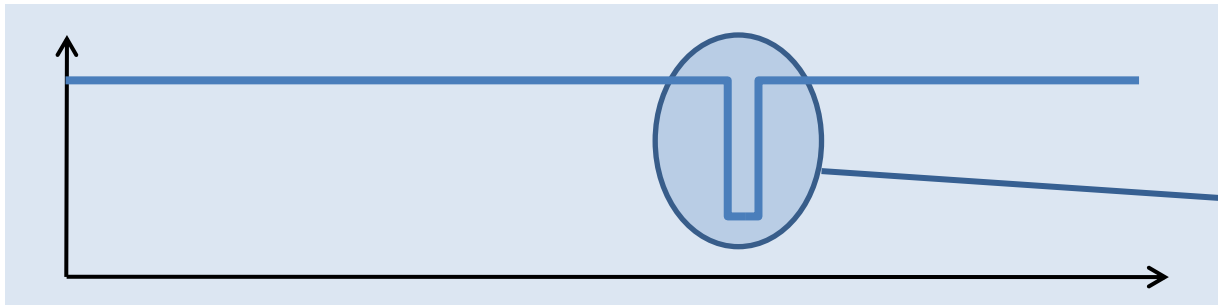


NHH – Profile average



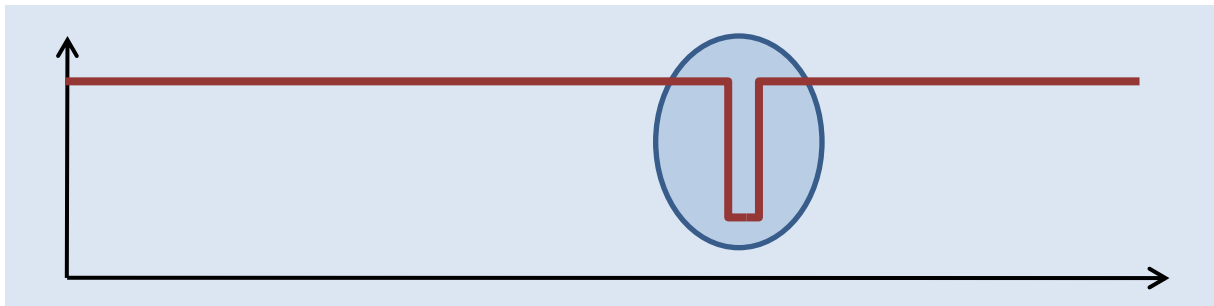
NHH – 'Chunked' Profile

Immediate Challenges Time of Use Tariffs (2)

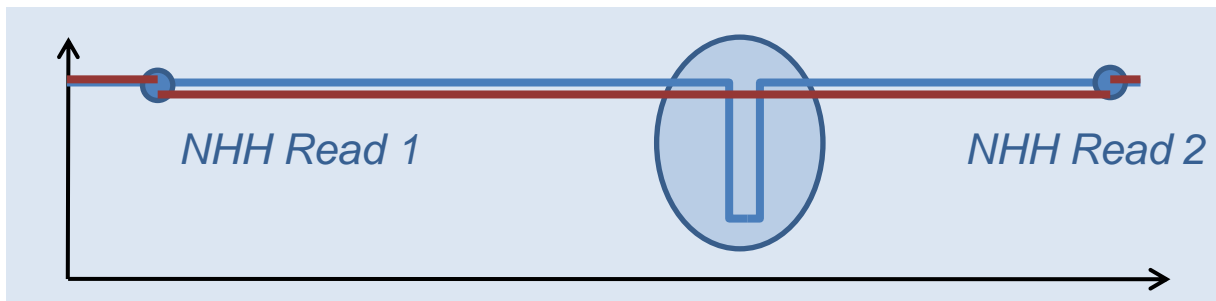
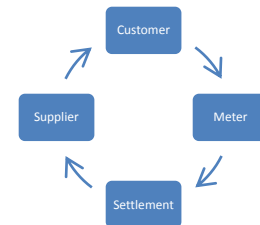


Customer Response to Supplier stimulus

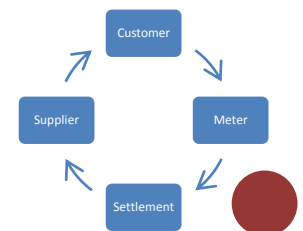
Consumers' Actual Consumption



Supplier's view - HH Actual Consumption ★★★★★



Supplier's view - deemed NHH Consumption★





Longer Term Challenges & Opportunities

MARKET REFORM

- Security of Supply
- Sustainability

NEW TECHNOLOGIES

- Intermittent Generation
- Distributed Generation
- Electric Vehicles

MARKET SIMPLIFICATION

- Business Processes & systems
- Codes

SMART GRIDS

- Multiple & diverse signals for consumers

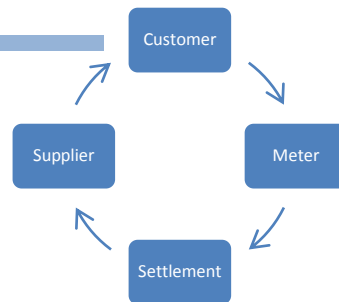
Longer Term Challenges Demand Side Participation

Multiple sources of consumer incentives?

- Supplier
- Distributor



Prediction is all



Metered Volume =
Contracted Volume



no imbalance

Metered Volume \neq
Contracted Volume



imbalance

What price to
cash out at?



Contracted Volume set at gate closure
=> complicates short term contribution

Longer Term Opportunities Simplified Systems and Processes

Users in a segmented world

X

Producers
Transmission
Distribution
Supplier
Settlement
.....

Electricity

- Reports
- Settlement
- Aggregation
- Registration
- Databases
- Interfaces
- Meters

Gas

- Reports
- Settlement
- Aggregation
- Registration
- Databases
- Interfaces
- Meters

Bespoke
Inflexible
Repeated

Longer Term Opportunities Simplified Systems and Processes

Users in an integrated world

Electricity & Gas

Web Services

- Information , reports

Configurable Products

- Rules engine, work flow, data analytics

Data

- Warehouse, rules based validation

Interface

- Standards – XML, https

Meters

- Two way communication

Scalable

Flexible

Configurable



Contact Details

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For more about ELEXON's smart programme:

www.elexon.co.uk/smart



effectively, efficiently and economically

remaining **independent**

benefit our **customers**
and stakeholders

deliver the BSC

identifying and exploiting new
opportunities

forefront of the **changes**
in energy markets

drive improvements

**leader in the efficient
transformation
of energy markets**

**shared solutions to address
common industry problems**

