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An Coimisiún um Rialáil Fuinnimh

National Smart Meter Plan

National Smart Metering Programme in Ireland

Presentation to
Electricity Settlement Expert Group

3rd September 2014

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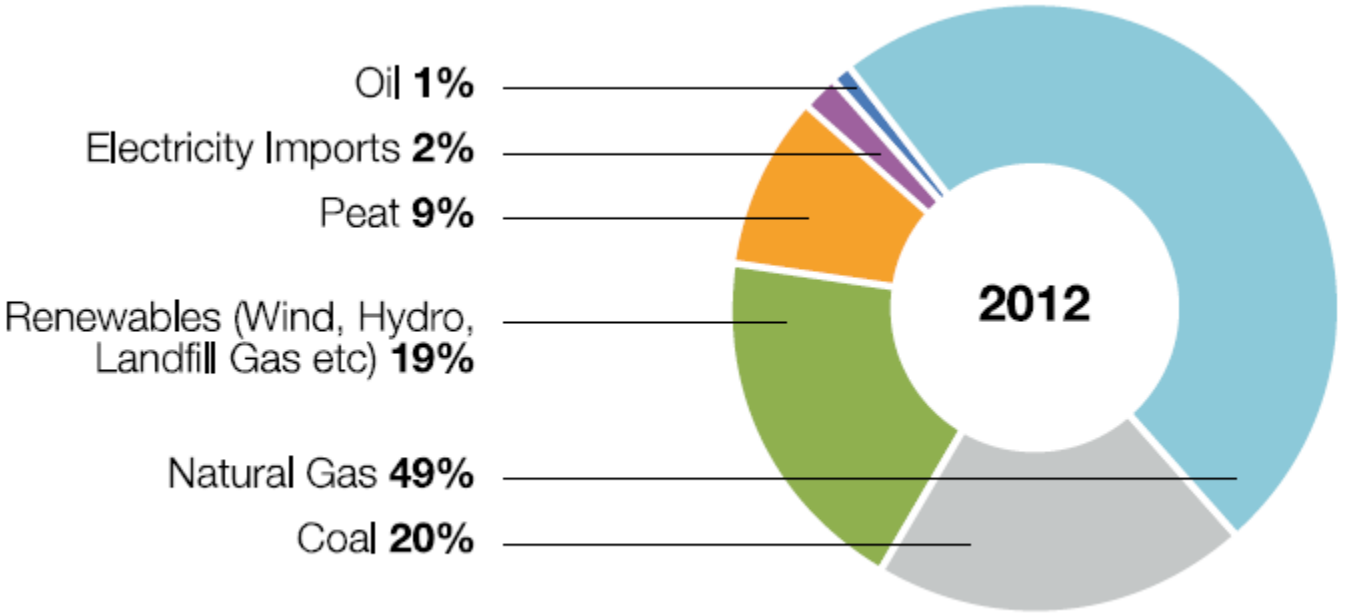
Agenda

National Smart Meter Plan

1. Background
2. Mandatory ToU
3. Settlement
4. Q&A

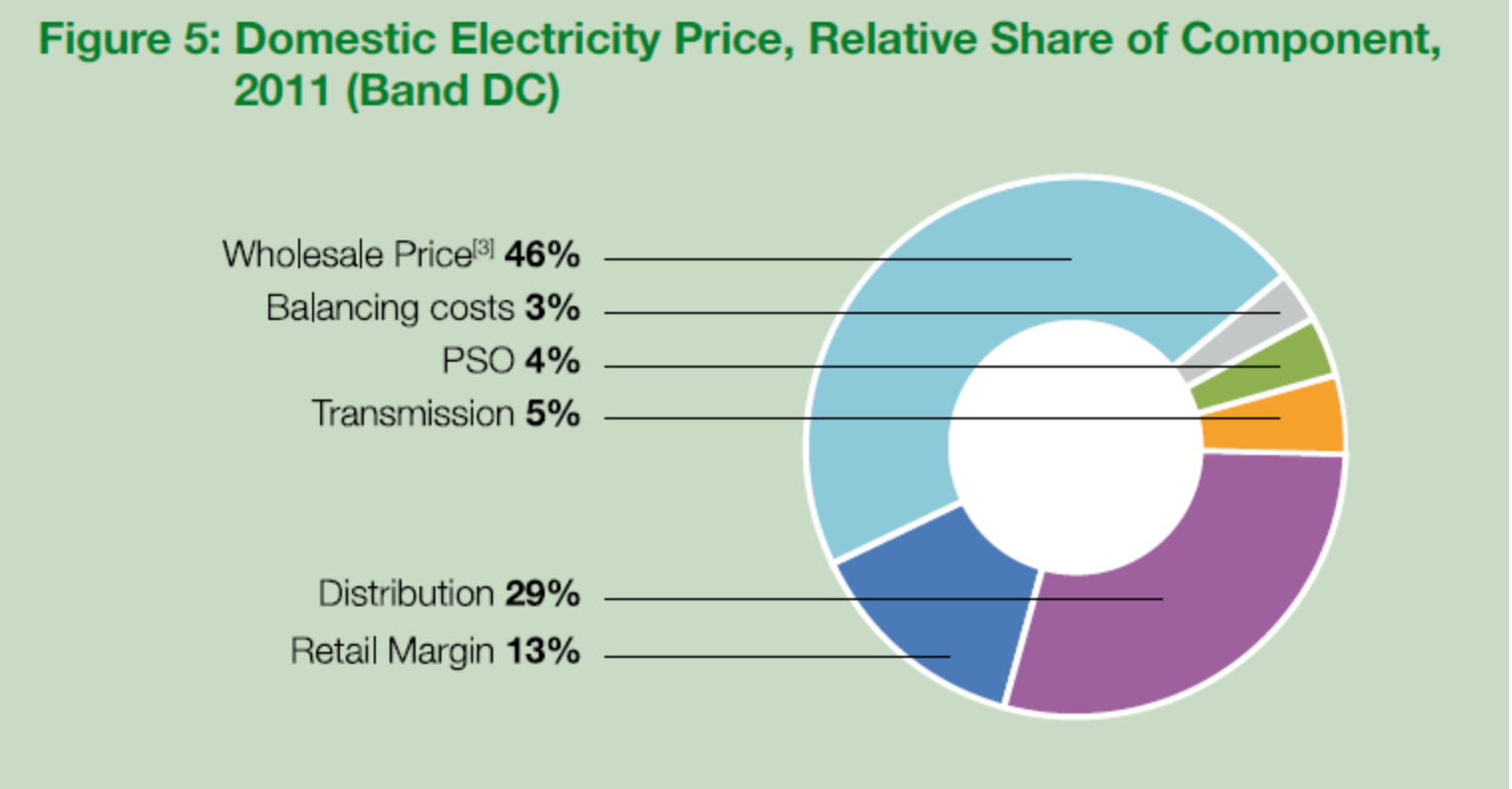
1. CONTEXT/BACKGROUND

Electricity Generation Fuel Mix



Source - Department of Communications, Energy and Natural Resources - Green Paper on Energy Policy in Ireland

What makes up the Electricity Price?

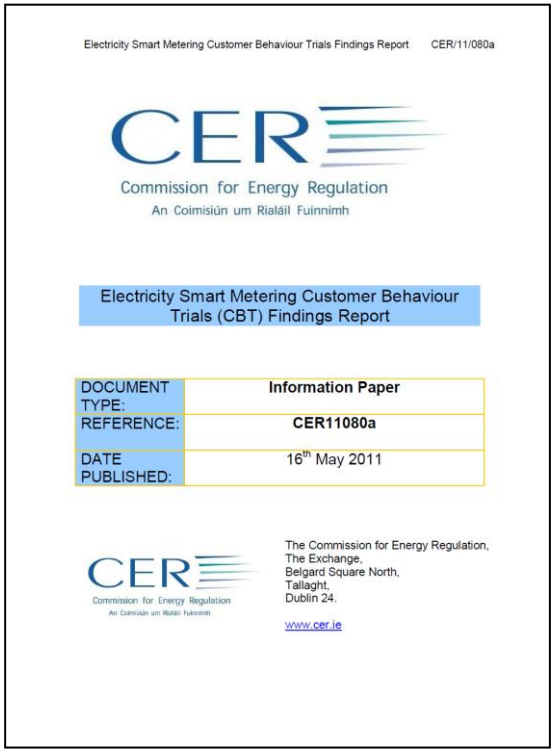


Source - Department of Communications, Energy and Natural Resources - Green Paper on Energy Policy in Ireland

Background

National Smart Meter Plan

Phase 1
Trials and CBAs



Electricity Smart Metering Customer Behaviour Trials Findings Report CER/11/080a

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Electricity Smart Metering Customer Behaviour Trials (CBT) Findings Report

DOCUMENT TYPE:	**Information Paper**
REFERENCE:	**CER11080a**
DATE PUBLISHED:	16th May 2011

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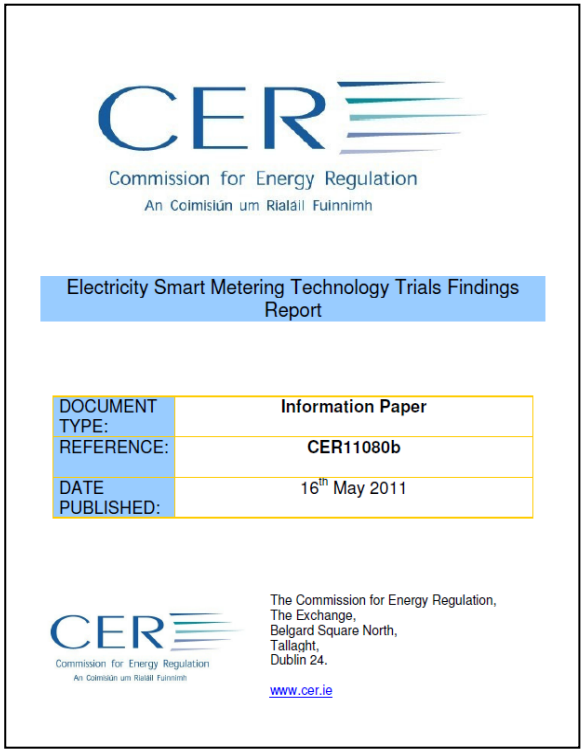

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Electricity Smart Metering Technology Trials Findings Report

DOCUMENT TYPE:	**Information Paper**
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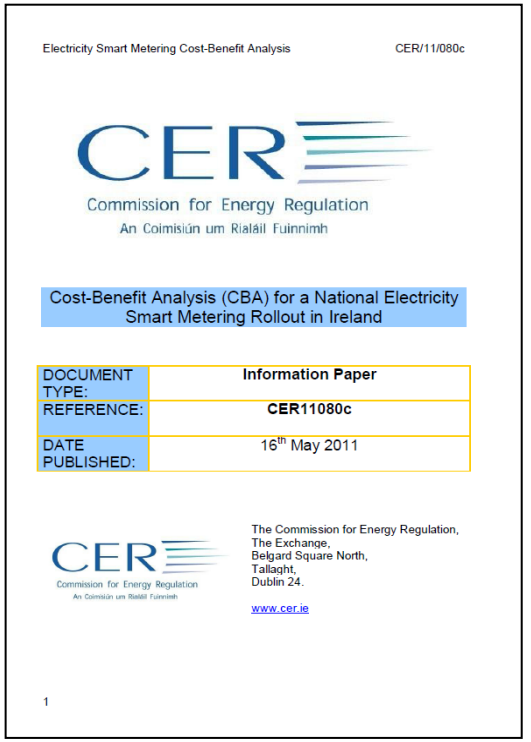

Electricity Smart Metering Cost-Benefit Analysis CER/11/080c

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Cost-Benefit Analysis (CBA) for a National Electricity Smart Metering Rollout in Ireland

DOCUMENT TYPE:	**Information Paper**
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1

Customer Behaviour Trials (2007)

National Trials into Technology and Customer Behaviour (c.6,000 electricity)

- Av. electricity usage savings of 2.5% overall & 8.8% peak reduction
- A range of viable technical solutions were tested

Initial Cost Benefit Analysis

- c.€229m NPV benefit estimated from combined national electricity & gas rollout (Consumer, Network & Generation benefits)
- c.€800m - €1bn investment cost

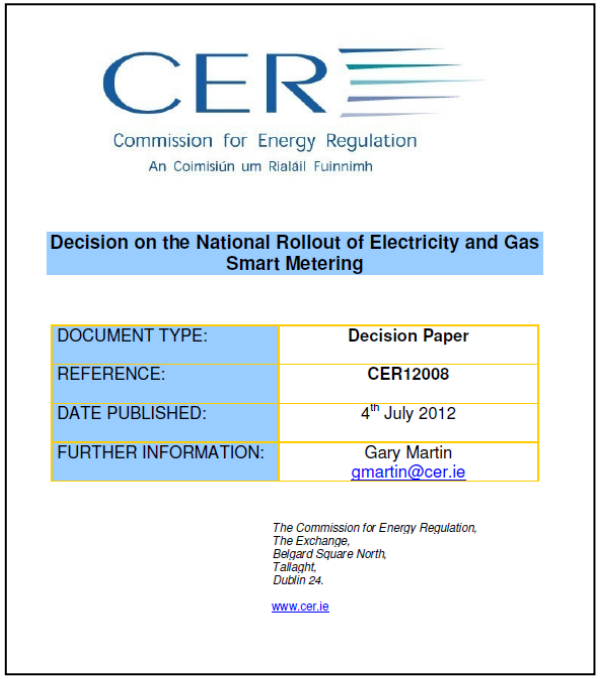
Quantitative

- Consumer Usage
- Generation
- Networks

Qualitative Benefits

- Smart Grid
- Micro Generation
- Electric Vehicles
- Smart Home
- Synergies with Gas

Decision on National Rollout: July '12



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Decision on the National Rollout of Electricity and Gas Smart Metering

DOCUMENT TYPE:	Decision Paper
REFERENCE:	CER12008
DATE PUBLISHED:	4th July 2012
FURTHER INFORMATION:	Gary Martin gmartin@cer.ie

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Key Policy Decisions

- Roll out smart meters – electricity & gas
- Mandating ToU Tariffs - all electricity customers
- Mandating energy usage statements
- Mandating IHD devices – all electricity customers
- Enabling broader and easier access to prepayment services

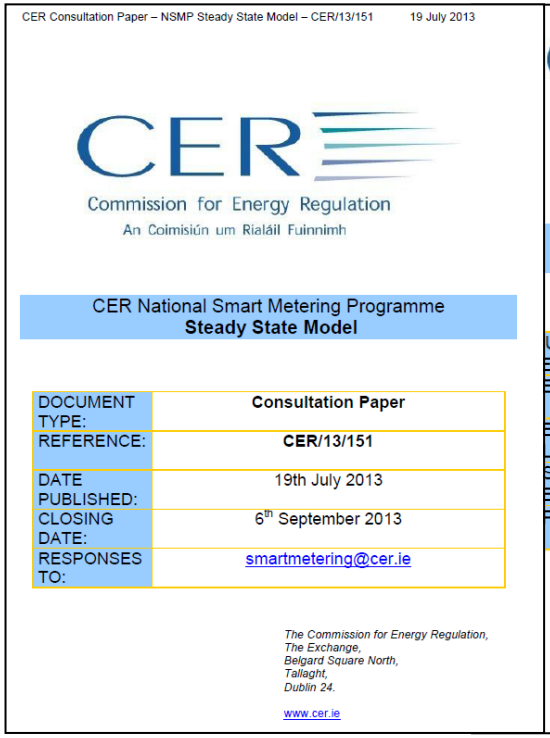
Strategic Objectives of NSMP

1. Encourage Energy Efficiency
2. Facilitate Peak Load Management
3. Support Renewable & Micro Generation
4. Enhance Competition & Improve Consumer Experience
5. Improve Network Services

High Level Design

Phase 1
Trials and CBAs

Phase 2
High Level Design



CER Consultation Paper – NSMP Steady State Model – CER/13/151 19 July 2013

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CER National Smart Metering Programme
Steady State Model

DOCUMENT TYPE:	**Consultation Paper**
REFERENCE:	**CER/13/151**
DATE PUBLISHED:	19th July 2013
CLOSING DATE:	6th September 2013
RESPONSES TO:	smartmetering@cer.ie

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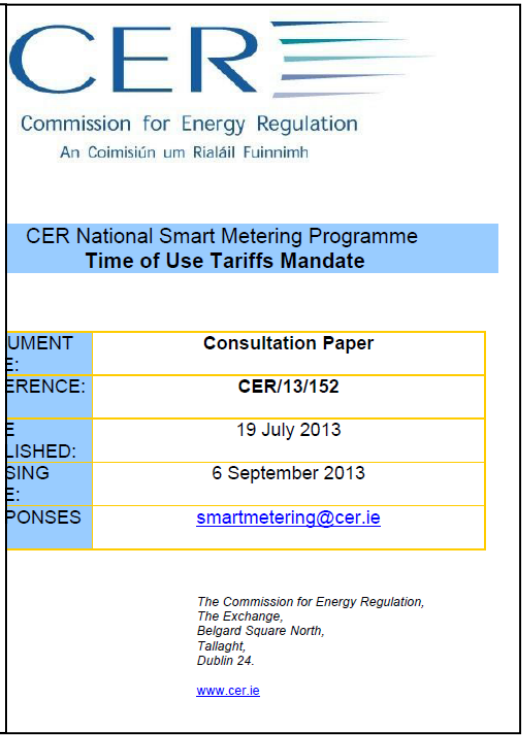

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CER National Smart Metering Programme
Time of Use Tariffs Mandate

UMENT E:	**Consultation Paper**
ERENCE:	**CER/13/152**
E LISHED:	19 July 2013
SING E:	6 September 2013
PONSES	smartmetering@cer.ie

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CER National Smart Metering Programme
Smart Metering High Level Design

DOCUMENT TYPE:	**Proposed Decision Paper**
REFERENCE:	**CER/13/286**
DATE PUBLISHED:	17th December 2013
CLOSING DATE:	24th January 2014
RESPONSES TO:	smartmetering@cer.ie

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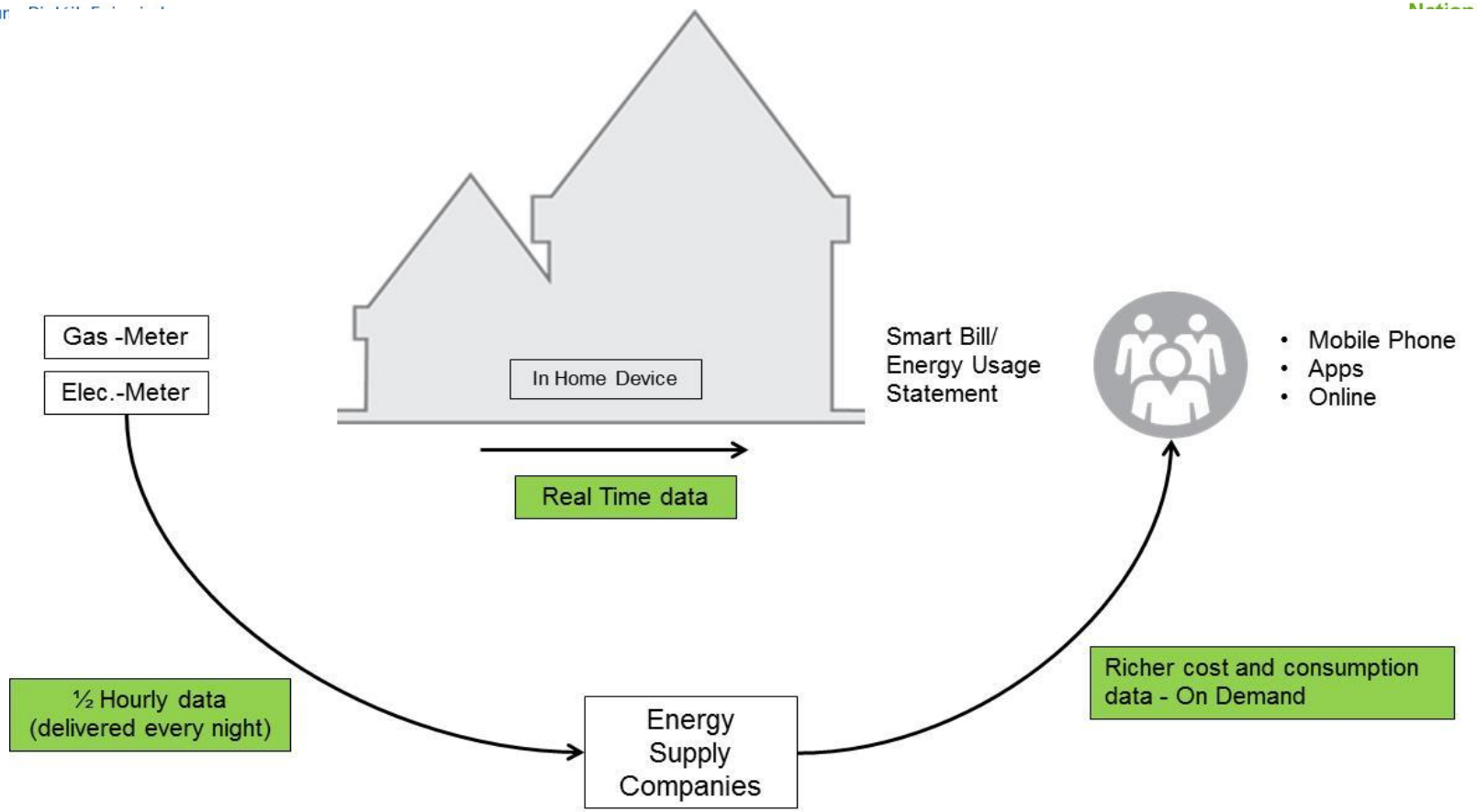
Solution Overview



ToU Mandate for residential electricity customers supports the business case. The programme is built on the concept that a large number of users making small changes in behaviour will reduce their individual energy bills and also reduce the national electricity/gas infrastructure spend

2. MANDATORY TOU

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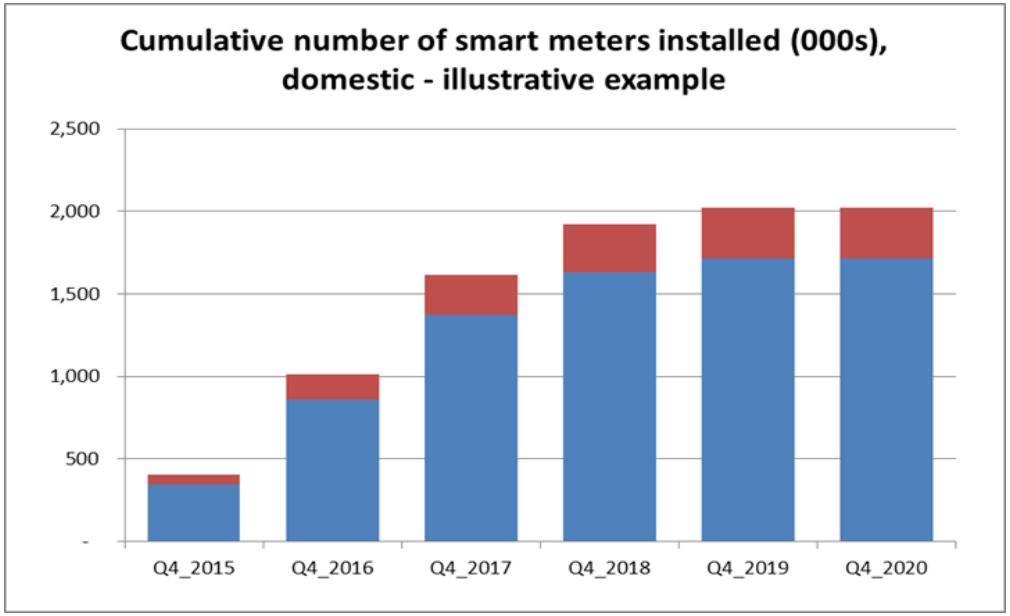
The Journey

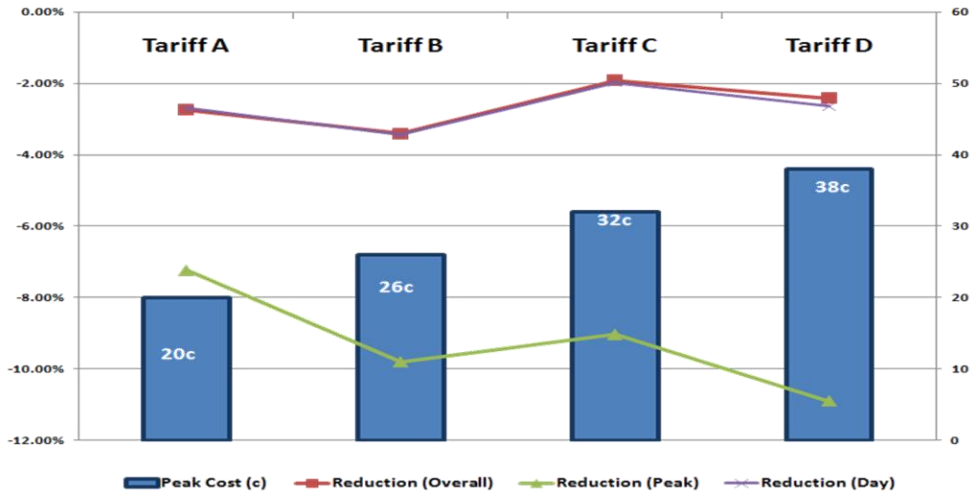
National Smart Meter Plan

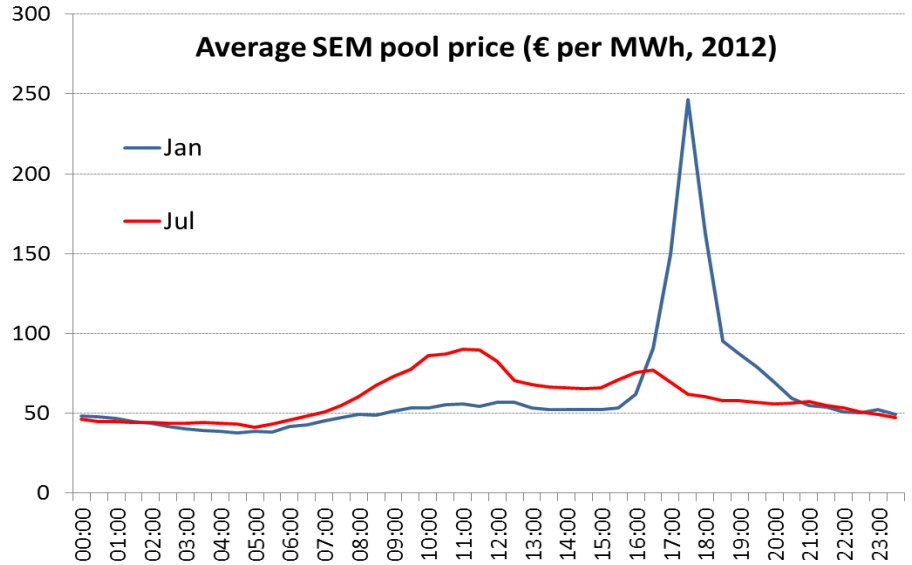


We are rolling out smart meters to all customers

..and mandating time-of-use tariffs as the norm

Mandating TOU Tariffs as the norm

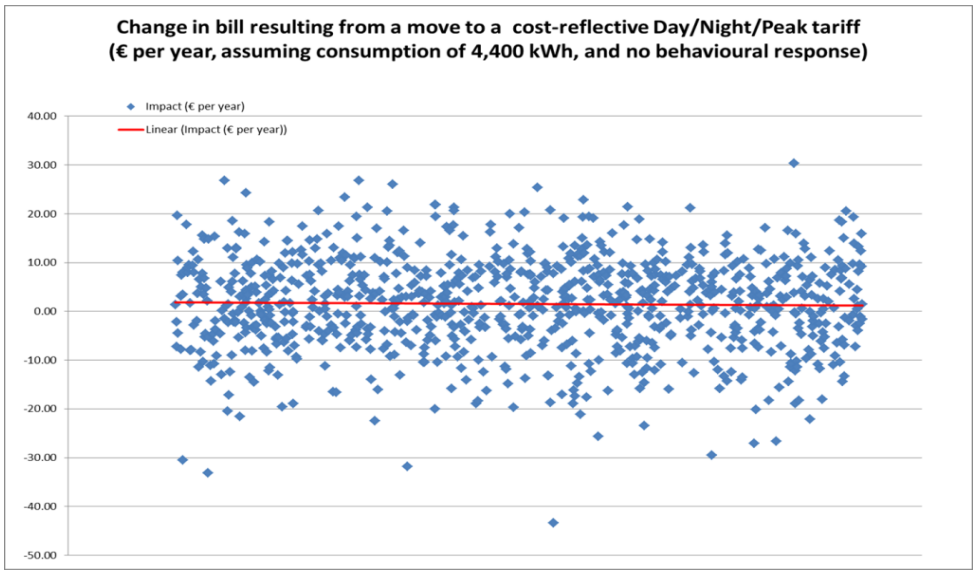


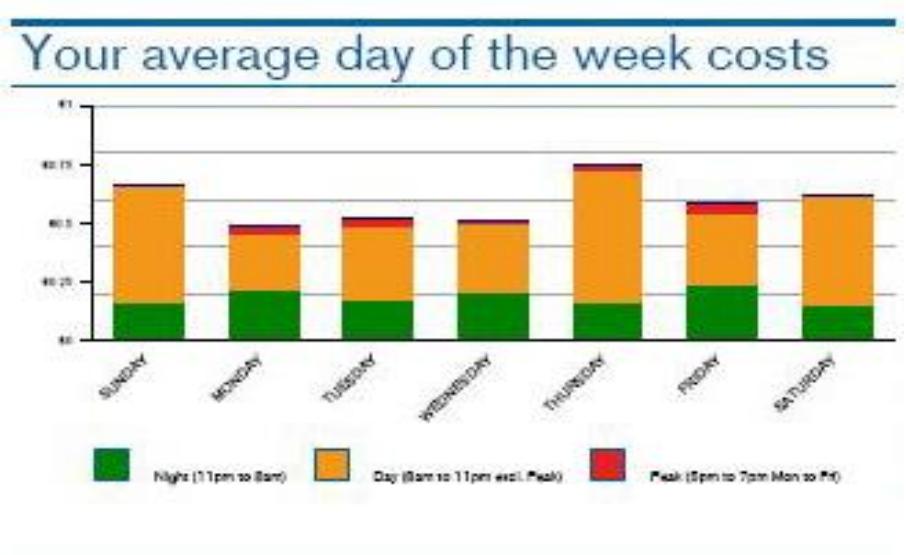


Because ToU has been demonstrated in trials and focus groups to be engaging and beneficial to consumers

..and will radically strengthen the link between wholesale and retail markets

Challenges of migrating to TOU





But it is important to understand the potential distributional impacts

..and focus on how to make it relevant to consumers, and to retailers

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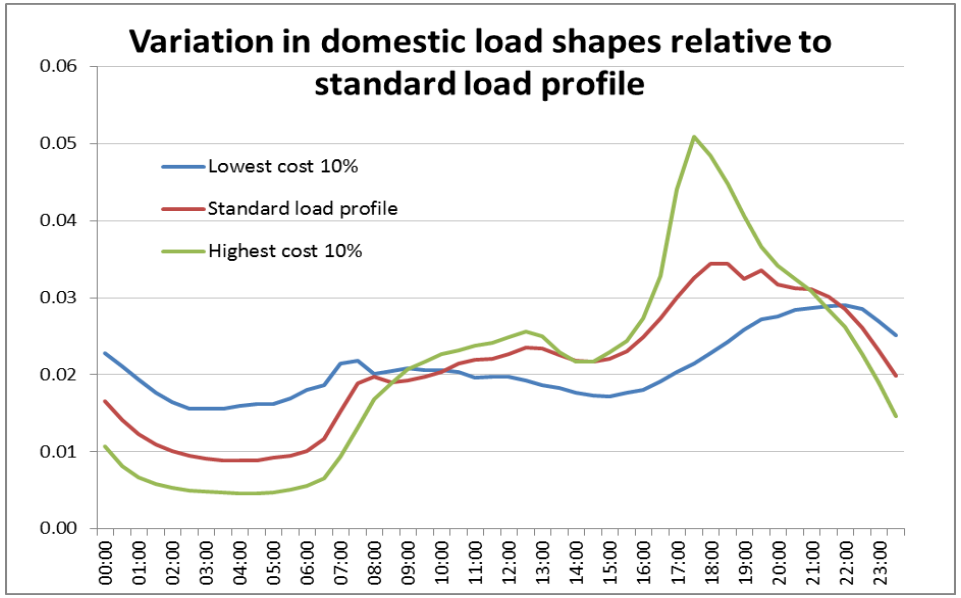
Success Factors

National Smart Meter Plan



Wholesale settlement using interval data is needed if you want to incentivise retailers to reduce peak consumption

..and a range of tools to help all consumers understand new tariffs and navigate new tariff choices

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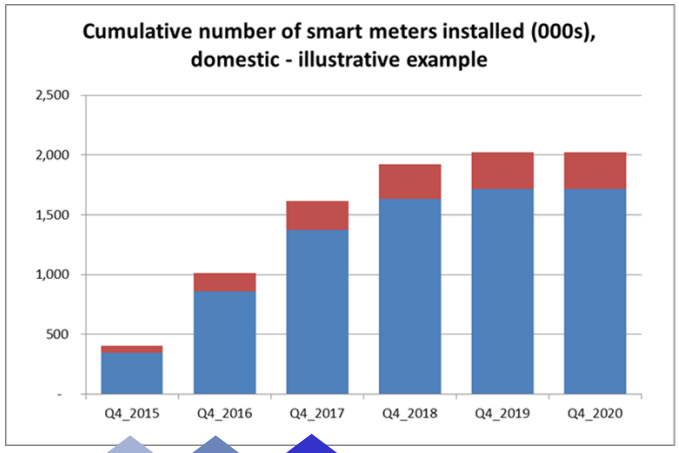
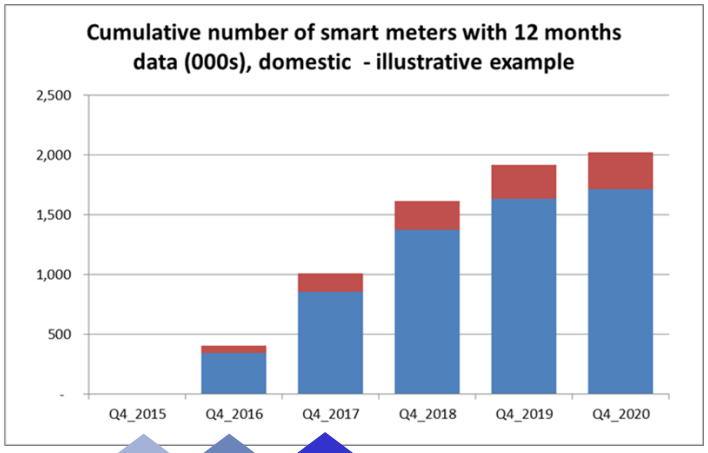
Understanding the Journey





By the end of Year 1:
- Only 1:5 customers have smart meters
- TOU not possible for majority
- No customer has 12 months data history
- No more than tens of thousands of smart customers per supplier

More controlled environment appropriate?

By the end of Year 2:
- Around 1:2 two households has a smart meter
- But only 1:5 households have 12 months data history
- A supplier with around 15% of the market would have 150,000 smart customers

Environment amenable to small scale trialling?

By the end of Year 3:
- Only 1:5 households do not have a smart meter
- And 1:2 have a 12 month data history
- A supplier with around 15% of the market would have 240,000 smart customers

Environment amenable to mass-market commercial tariff choices?

A regulatory framework that support both consumers & retailers

Domestic suppliers:

- Standard Day/Night/Peak structure
- Minimum winter peak premium
- Minimum summer night discount

Non-domestic suppliers:

- Day/Night/Peak structure

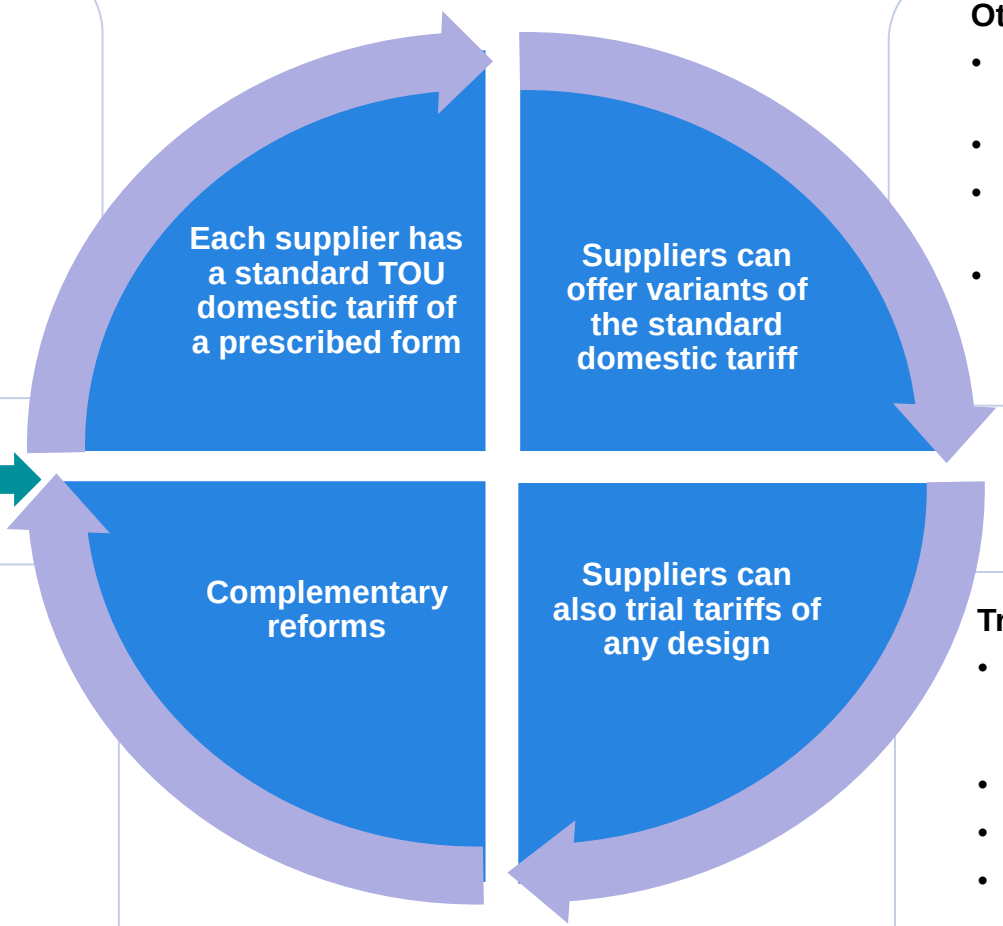
On-going review and monitoring

Wholesale Settlement:

- Settle using interval data

Tariff comparison

- Standard metrics?
- Standard forms of presentation?



Other tariffs if:

- Retain comparable D/N/P structure
- Consumers opt in
- Subject to customer info needs being met
- Should flat rate tariffs being permitted?

Trials are on:

- An opt-in basis only (customers must know they are on a trial)
- Maximum customer numbers
- Time-limited
- Subject to meeting customer info requirements

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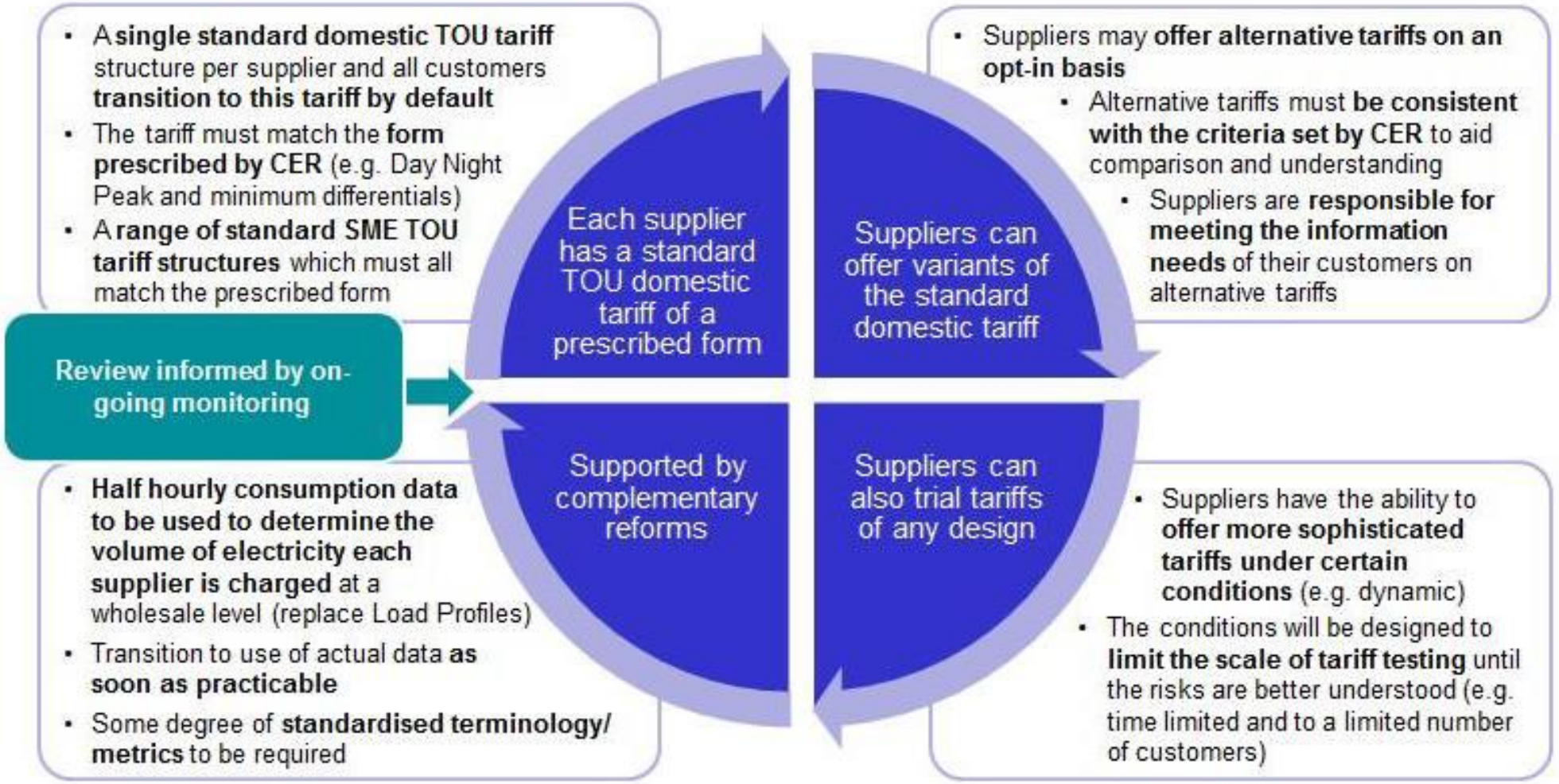
A regulatory framework that support both consumers & retailers



3. SETTLEMENT

Clarity of Roles

1. Encourage Energy Efficiency
2. Facilitate Peak Load Management
3. Support Renewables & Micro-Gen
4. Enhance Competition & Improve Customer Experience
5. Improve Network Services

A. Consumer Focussed
B. Consistent & Integrated solution
C. Scalable & Future Proofed
D. Cost Efficient
E. 'Best-fit' for the Irish market

- Demands timely and relevant information to affect their behaviour
- Demands an experience/solution from the industry which incorporates the above 5 design principles.
- (Industry expects) the Customer to be an engaged participant

Customer

- Have the primary relationship with the Customer.
- Are commercially incentivised to provide timely and relevant information via innovative products to achieve ToU shifting, maintain Customer loyalty & grow market share.

Suppliers

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- Operate in a regulated market with established processes which may be complex and costly to change.
- Will act as service providers to the Industry of a defined set of Smart Services via the AMI.
- Have a responsibility to procure, implement and operate an AMI solution which incorporates the above 5 design principles.

Networks

- Sets industry policy and guidelines to achieve the above 5 NSMP strategic objectives.
- This will include identifying incentives for each stakeholder to maximise the return from the NSMP investment.
- Ensures compliance with EU Directives.

Eirgrid

Recipients of aggregated actual consumption to enable network planning and demand side management.

Empirical Relationship between costs and prices

Non-interval data
Supplier tariff design – what supplier hedge for consumers
Regulation

Loss of accuracy/granularity

Actual costs incurred in dispatching generation and managing flows across transmission and distribution networks

Transposed into a set of costs that individual suppliers see

Transposed into a tariff that a customer sees

Loss of accuracy/granularity

Wholesale market settlement rules
Network connection and use of system charges

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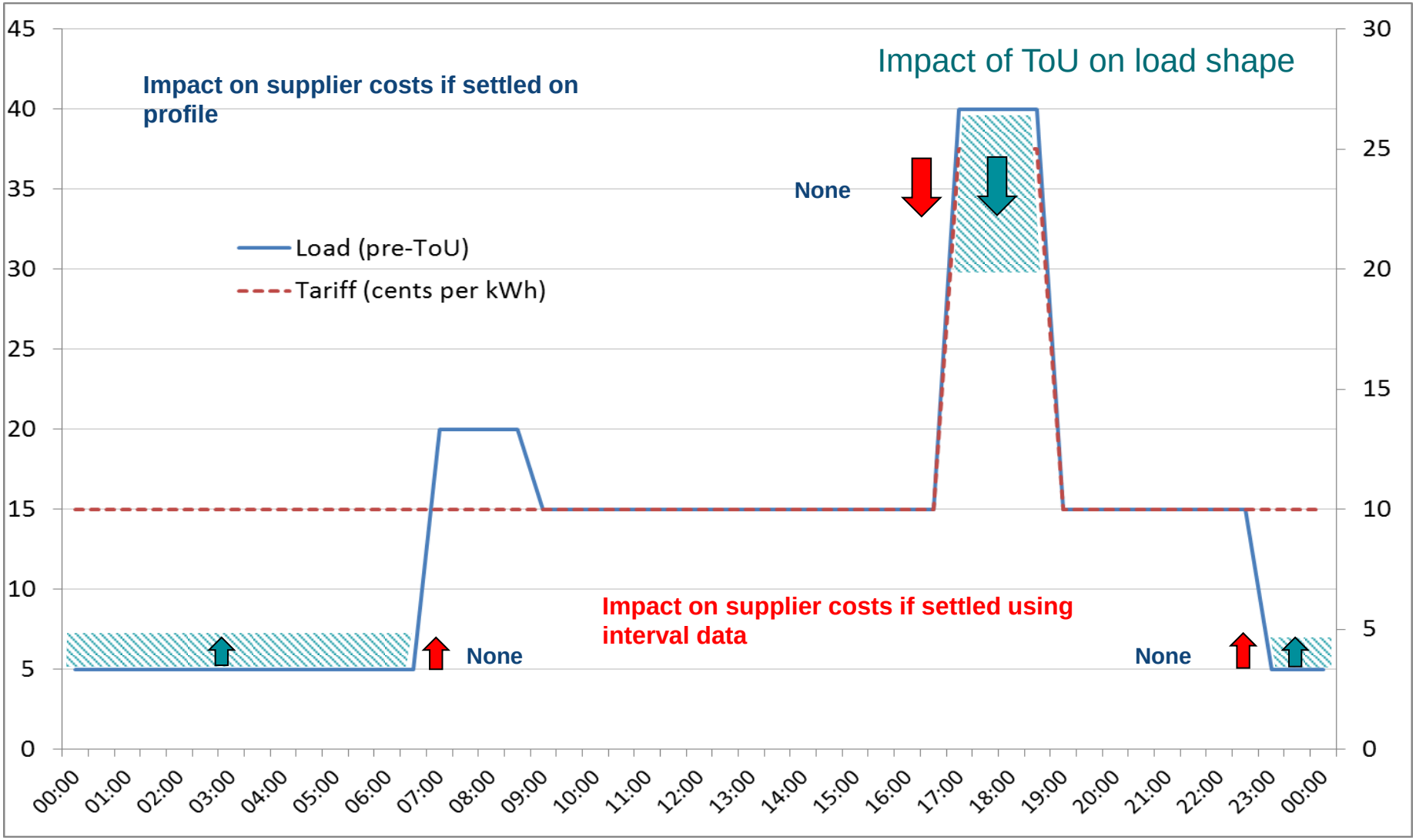
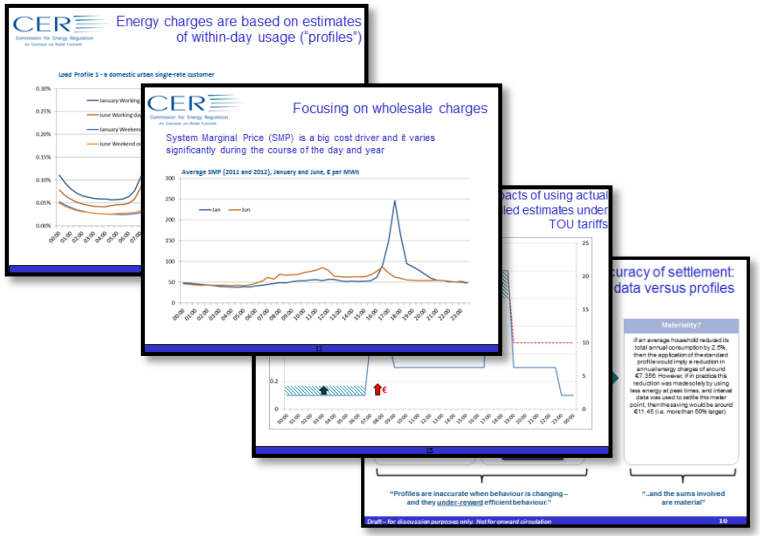
Wholesale costs with or without profiles



Transition to an accurate settlement regime



Current settlement arrangements

The current arrangements are inaccurate and limit the incentives on suppliers to offer cost reflective tariffs, because:

- Using profiles means that we fail to correctly allocate the cost of electricity to each customer/site (and hence supplier) on a half-hourly basis
- It can take several months to get an actual read, and estimated data is often incorrect

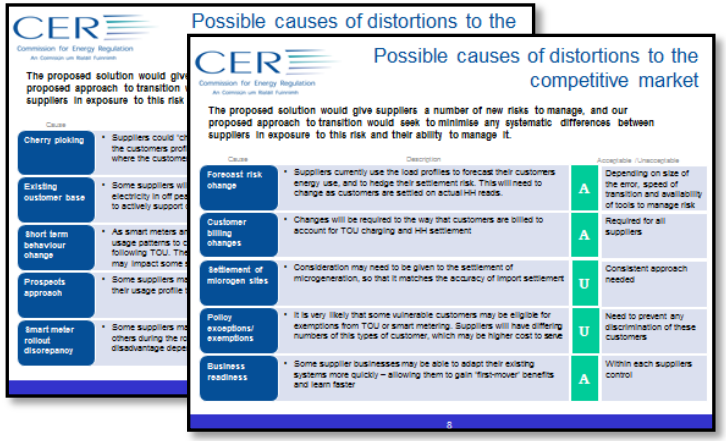
High level solution

These issues could be resolved by:

- Using **actual data rather than estimates** (timeliness)
- **Removing profiles**, and using half hourly metered data for all smart metered sites

This represents a significant change to the settlement arrangements, and consideration needs to be given to how we might transition

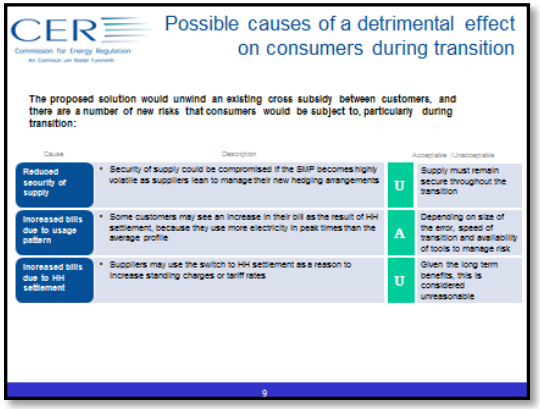
Potential Risks to Settlement Transition



Market distortion

Potential for an unacceptable level of market distortion if transition isn't carefully managed, due to:

- The rollout approach resulting in some suppliers having more customers with smart meters than others during transition
- Suppliers 'cherry-picking' which customers to settle based on the most advantageous approach to them



Adverse customer impact

Less risk for consumers, but transition approach will need to ensure that:

- Settlement, and SMP remains stable throughout to ensure that security of supply is not compromised in any way
- Consumers don't face bill increases specifically linked to the approach used to settle their meter

4. Next Steps/Q&A

Next Steps

- Publish the High Level Design

- Develop the detailed regulatory framework/policy to support the NSMP