energy networks association

ENA

WEBINAR – DRAFT ELECTRICITY NETWORK TARIFF REFORM HANDBOOK

27 APRIL 2016

PURPOSE OF THE WEBINAR

To share contents of the **Electricity Network Tariff Reform Handbook – *Draft for Consultation***

To discuss the draft Handbook's insights and actions for tariff reform

To enable discussion of issues and questions

TARIFF REFORM

- Essential to the transformation of Australia's electricity system
- **Revenue neutral** for network businesses
- Implementing more **cost-reflective network tariffs** in a **timely** way, with close customer **engagement**, can:
  - make electricity bills **fairer, reducing cross-subsidies** between customers
  - **avoid significantly higher electricity bills** in the long term;
  - incentivise **efficient investment** in current and new technologies and foster new markets; and
  - significantly influence Australia's long-term **energy productivity** during a critical period of change.

TOPICS

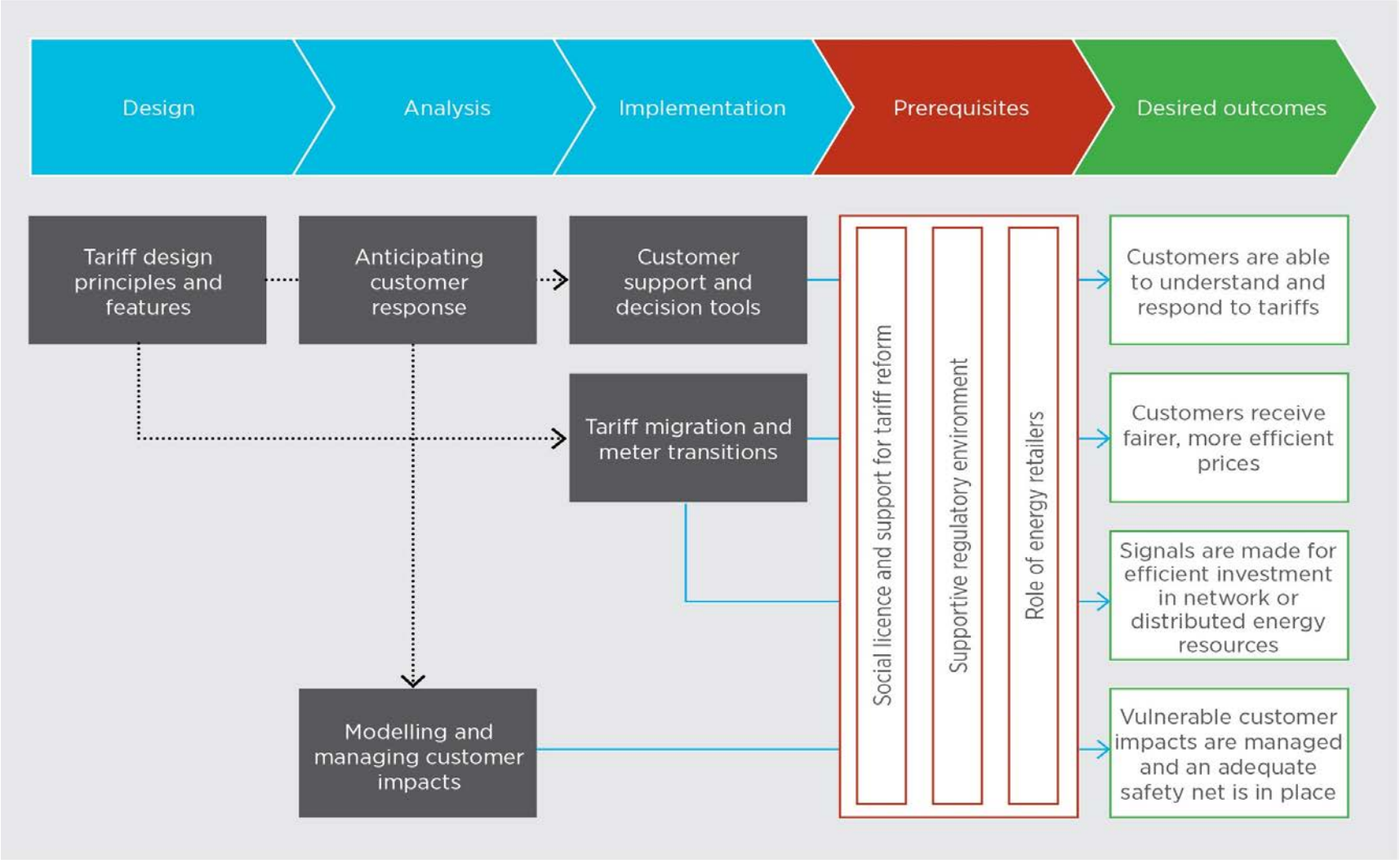
- Purpose of the Network Tariff Reform Handbook
- Content of the Handbook

PURPOSE OF THE HANDBOOK

- Handbook is a toolbox
  - For distributors and industry stakeholders to plan and implement the shift to cost-reflective distribution network prices
  - Recognises that reform is more than a Rule or a new tariff design
  - Informs action to implement reform
- ENA and members want the Handbook to contribute to
  - Reducing existing and future inequity among customers
  - Enabling efficient investment in and use of new technologies and services by customers
  - Delivering lower long term electricity costs to customers

REWARDING CUSTOMERS FOR SMART ENERGY USE

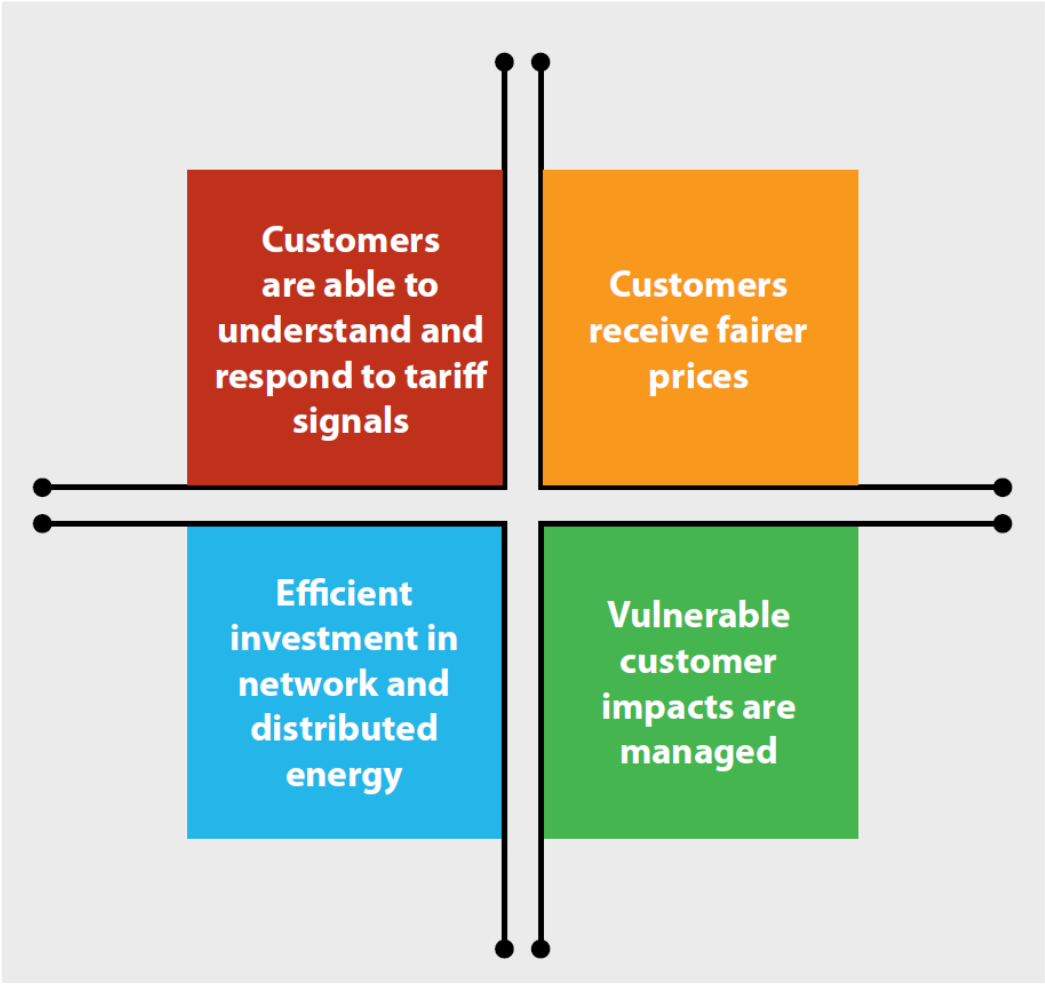
STEPS OF TARIFF REFORM



CONTENT: STEPS OF TARIFF REFORM

1. Desirable Outcomes of Network Tariff Reform
2. Principles for Designing Network Tariffs
3. Analysing Customer Impacts
4. Implementing Network Tariff Reform
5. Prerequisites for Network Tariff Reform

1. DESIRABLE OUTCOMES OF TARIFF REFORM

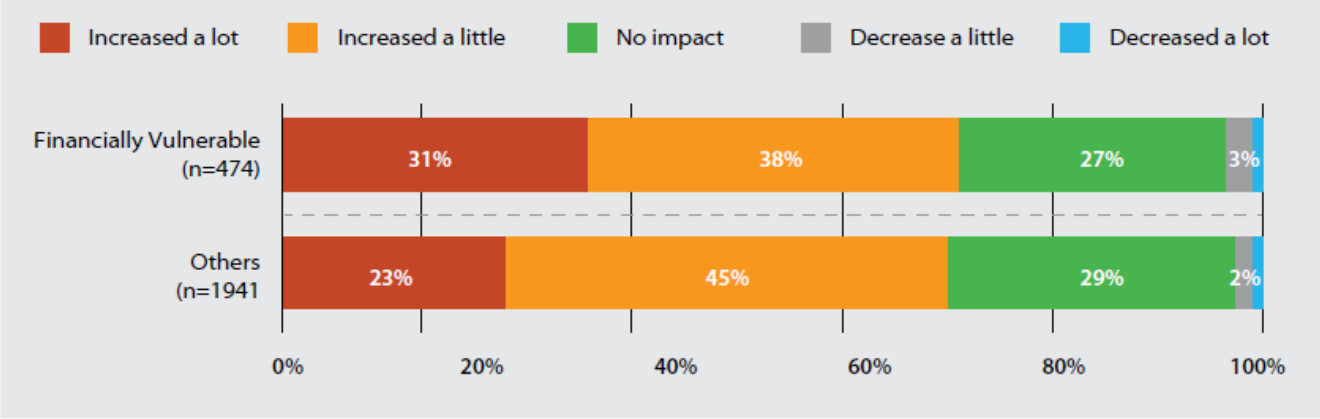


1. DESIRABLE OUTCOMES OF TARIFF REFORM

> Managing impacts on vulnerable consumers:

- Care needed in tariff design and transitional arrangements to assist vulnerable customers and small businesses.
- AGL study: 64 per % of customers were better-off, with the cohorts that gained the most Households in Hardship, Working Couples and then Concession & Pensioners.
- However, impacts of network tariff reform will depend on their individual circumstances, needs and behavioural responses.
- Network tariff reform is not, by itself, the best means of promoting energy affordability – consideration of retail interface and government support mechanisms.

Figure 4 Smart Grid Smart City trial results – ability of participants to reduce electricity use[7]



Source: SGSC, National Cost Benefit Assessment: Executive Report, Section 6.5, figure 10

2. PRINCIPLES OF NETWORK TARIFF DESIGN

- NER's network pricing objective and pricing principles consistent with relevance of Bonbright principles.
- RMI notes transformation of the energy industry increase need for minimising cross subsidies
- In TSS, DNSPs must comply with the pricing principles but can depart to the extent necessary to meet the consumer impact and jurisdictional pricing obligation principles.

Figure 5.1: Bonbright's principles (with an addition by the Rocky Mountain Institute)

2. PRINCIPLES OF NETWORK TARIFF DESIGN

- Designing and implementing new tariffs must be informed by known customer preferences
- Behavioural economic studies show that customers:
  - Weigh potential losses more heavily than future benefits
  - Are risk averse, preferring certainty
  - Tend to stick to defaults in the face of more and more information
  - Are poorer decision-makers when faced with more information and options
- Effective engagement with customers is essential

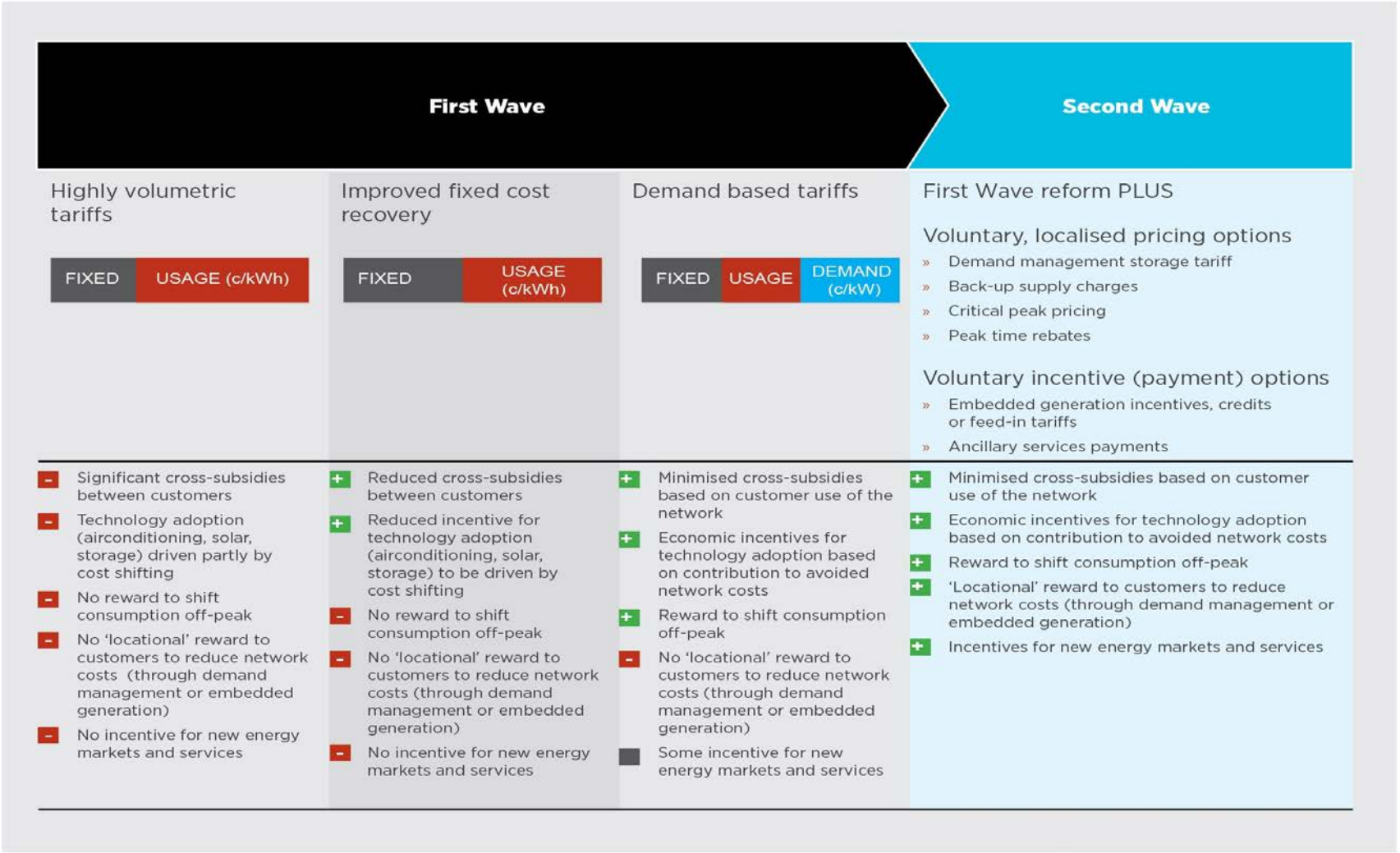
Opower:

"Design tariffs for how people actually behave – service providers should be experts in the science of human behaviour if they are trying to change it."

2. PRINCIPLES OF NETWORK TARIFF DESIGN

- **Declining** block, **Time-Varying Tariffs** and **Demand Tariffs** are more cost reflective than flat rate tariffs.
- Demand Tariffs a common focus - comprising:
  - Fixed charge ($/month)
  - Variable energy change ($/kWh)
  - Demand charge ($/kW)
- Based on a customers' maximum kW demand over a defined period of time
- Require the installation of smart/interval meters to record customers' peak demands

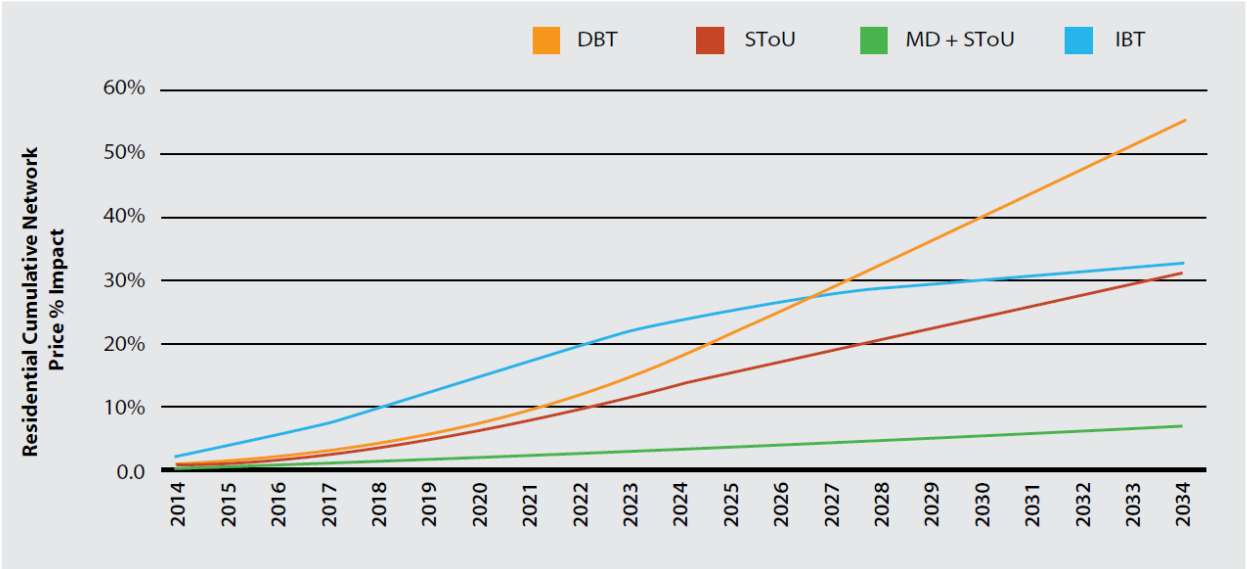
TWO WAVES OF TARIFF REFORM



2. PRINCIPLES OF NETWORK TARIFF DESIGN

- Handbook cites a range of comparative analyses of **benefits of reform options**, including:
  - Energeia analysis for ENA
  - Brattle in the USA – 19 utilities offering residential peak demand tariffs
  - Sweden experience since 2006

Figure 5: Energieia Modelling of Cumulative Network Price Increases by Tariff Scenario and Customer Class to 2034



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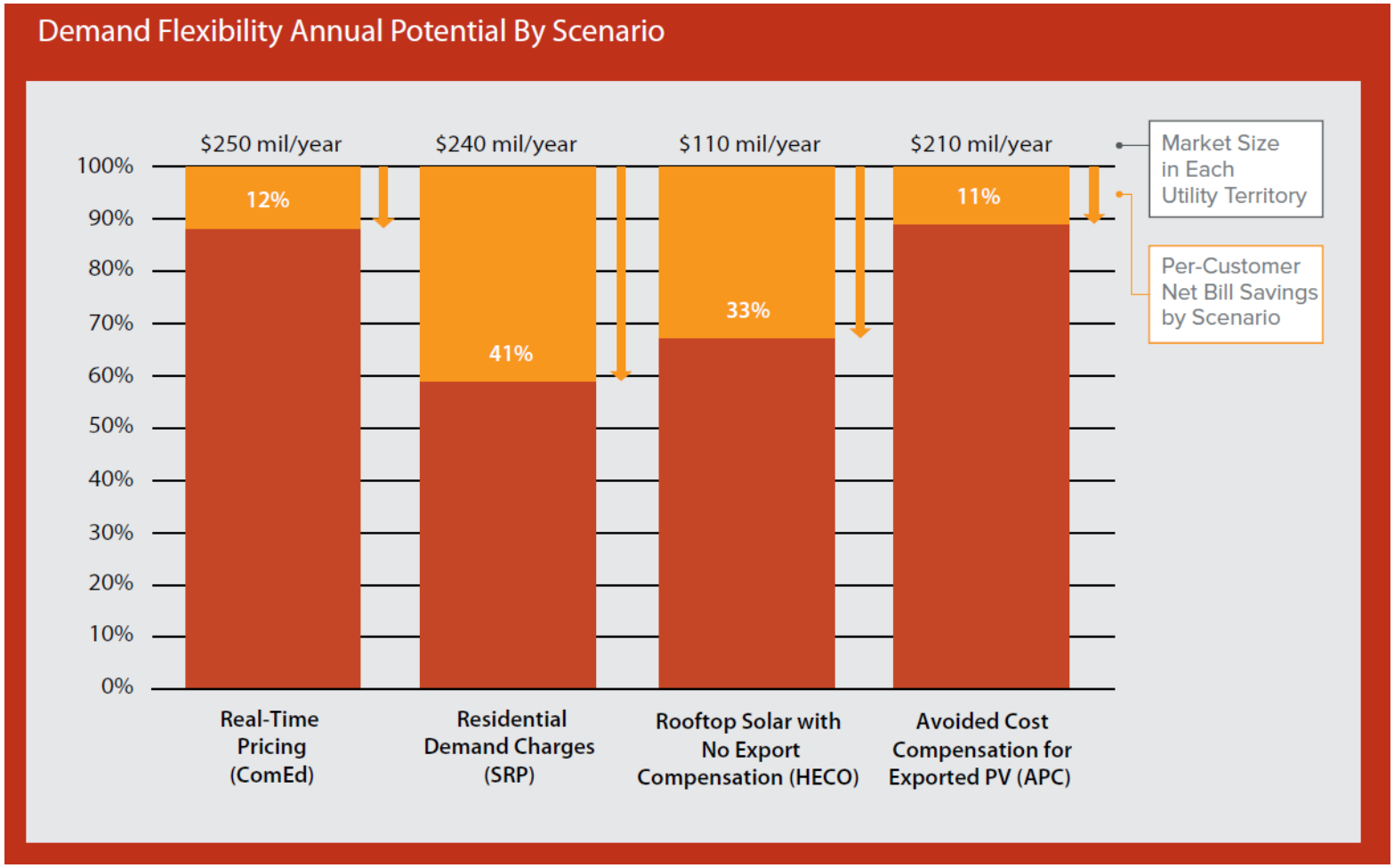


RMI, *The economics of demand flexibility - how "flexiwatts" create quantifiable value for customers and the grid*, August 2015

2. PRINCIPLES OF NETWORK TARIFF DESIGN

- Choices within Demand Tariff Design
  - Basis for Demand/Capacity Charge: (eg. Monthly, Annual, Coincident)
  - Time interval of demand measurement (eg. 1 hr, 15 minutes);
  - Defined Peak Demand Period
  - Variation between customers (eg. connection size or location)
  - Seasonality
  - Relationship
- Trade Offs between Design Principles
  - Appropriate balance may change over time

Case Study 5: United Energy's seasonal demand time of use tariff[25]

United Energy introduced a new seasonal demand time of use tariff on 1 July 2015 for its residential customers, as an initial step towards more cost reflective tariffs. The tariff comprises three elements: a peak demand charge; an anytime usage charge; and a fixed charge. The tariff, which is available to customers on an opt-in basis, seeks to better align individual customers' use profiles with their resultant network cost.

United Energy provided a 10 per cent discount on this tariff as an incentive to retailers and customers. United Energy's analysis shows that:

» 58 per cent of its customers would be automatically better off on this tariff; and

» Customers with a flatter demand profile generally benefit most from this tariff.

United Energy's intention is to provide a more cost reflective pricing structure that:

» Reduces cross-subsidies between different types of residential users;

» Reduces network investment as customers respond to price signals by shifting discretionary load to off peak periods and reducing load in peak demand periods; and

» Introduces cost-reflective signals for the next wave of technological change.

3. ANALYSIS OF CUSTOMER IMPACTS

- Handbook describes approaches to analysing customer impacts to inform tariff design and implementation
  - Quantify **starting position** by analysing existing cross-subsidies
  - Estimate the **long term outcomes** of tariff design choices (Ergon Energy case study 6)
  - **Analyse impacts on network charges** (Energex case study 7)
  - Engage with customers to ascertain
    - **Customer understanding** of network tariff reform
    - **Potential customer behaviour** under different tariffs – the application of behavioural economic analyses

Case Study 7: Energex residential customer impact study[29]

Energex prepared a Customer Impact Statement that quantifies the financial impact of its proposed new cost reflective network tariffs that form part of its TSS that was submitted to the AER on 27 November 2015. Energex's study, which it undertook in conjunction with the CSIRO, analysed 16 different residential customer cohorts using load profile data, in the absence of half hourly metering data. The following table details the annualised bill impact of all of Energex's sample customers.

Customers better off			Customers worse off		
>10%	5-10%	0-5%	0-5%	5-10%	>10%
31%	15%	12%	13%	10%	20%

Energex's analysis found that 12 of the 16 residential customer cohorts it examined are likely to have more customers that are positively impacted by tariff reforms than are negatively impacted, with the remaining four cohorts having more customers that are negatively impacted. However, Energex found that:

…..a significant number of customers in each customer group might be facing an increase in their annual electricity bill of 10 per cent or more. These results highlight the need to develop tools, such as education material, that will enable customers to mitigate some of the negative impact they might experience from demand tariffs.

Accordingly, Energex has developed tools to enable stakeholders to estimate average annual residential bills under tariff reforms. It is also proposing to apply a bill protection mechanism to mitigate the negative financial impact of demand-based tariffs to residential customers.

4. IMPLEMENTING NETWORK TARIFF REFORM

- Essential for successful implementation are:
  - Customer support and decision tools
  - Managed tariff migration and metering transitions

4. IMPLEMENTING NETWORK TARIFF REFORM

- Tariff reform should support customers to make decisions which best satisfy their needs. This includes being able to:
  - understand new tariffs,
  - understand how tariffs affect their own circumstances and
  - being in a position to respond to the price signals a tariff sends them.

- Effective Support requires
  - **Coordinated information flows**
  - **Tailored Information**– simple and clear. Information to customers showing how their actions have saved them money

4. IMPLEMENTING NETWORK TARIFF REFORM

- Customers will need tools and information to respond effectively to cost reflective tariffs. Range of options
  - **Simple displays** (eg. "glowing orbs") which signal changing demand levels
  - More complex **In Home Displays** real-time displays with potential to show energy use and costs, compare retail plans
  - **Social marketing** communications to advise customers about peak demand events

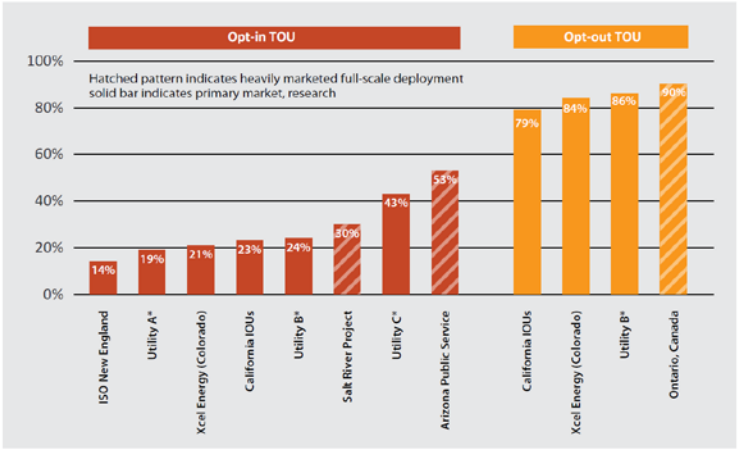
Six Options to manage customer impact in Transition:

- Providing customers with **shadow bills** during an interim period;
- Providing **rebates** for technology to assist customers to manage their peak demand levels
- Adopting **innovative price paths** to limit the effects on customers in the early stages and strengthen the signal over time (this might be particularly effective at a time of declining prices);
- Imposing **tiered demand charges or ceilings** on measureable peak demand (i.e. a maximum price) will limit some of the exposure that customers have to bill risk imposed by tariff reform;
- **Applying bill capping** to customers' network costs typically, this would apply for a limited period of time only (see Case Study 10); and
- Providing an on-going **"safety net"**, determined and administered by government.

4. IMPLEMENTING NETWORK TARIFF REFORM

- **Implementation Timeframe** critical to consider the market context including:
  - The mix of advanced and accumulation meter stock;
  - The level of customer knowledge and appetite for change;
  - The extent of peak demand growth pressure; and
  - The growth in DER, which will drive cross-subsidies
- DNSPs should **evaluate** costs, benefits and risks to customers of fast or slow implementation – as part of engagement program

Figure 7 US Residential TOU Enrolment Rates



Source: The Brattle Group, Rolling Out Residential Demand Charges, May 2015, slide 23

5. PREREQUISITES FOR NETWORK TARIFF REFORM

Social Licence

Customers (and their agents)

- **Understand** what the reform is seeking to achieve, why it is important, what the benefits will be and how the impacts will be managed, particularly for vulnerable customers;
- **Have confidence** that the stakeholders they entrust to implement the reform – governments, retailers, customer advocates and distributors – will work together for the benefit of all customers; and
- **Have confidence they have the tools and the decision support information** to allow them to control their energy use and respond to the new cost reflective tariffs.

5. PREREQUISITES FOR NETWORK TARIFF REFORM

Social Licence

+

Supportive Regulatory Environment

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5. PREREQUISITES FOR NETWORK TARIFF REFORM

Social Licence + Supportive Regulatory Environment + Engagement with Retailers

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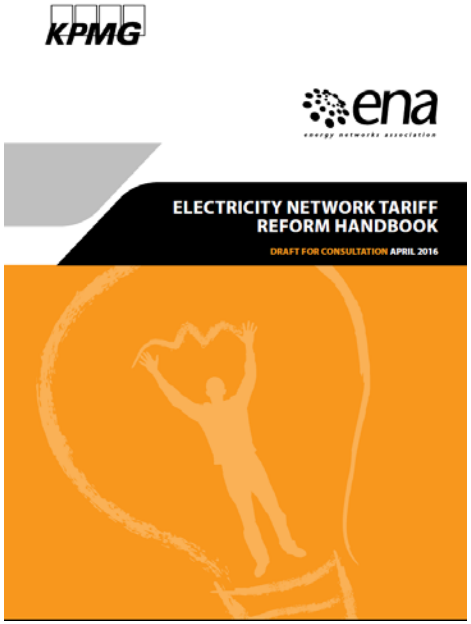
Feedback welcome…

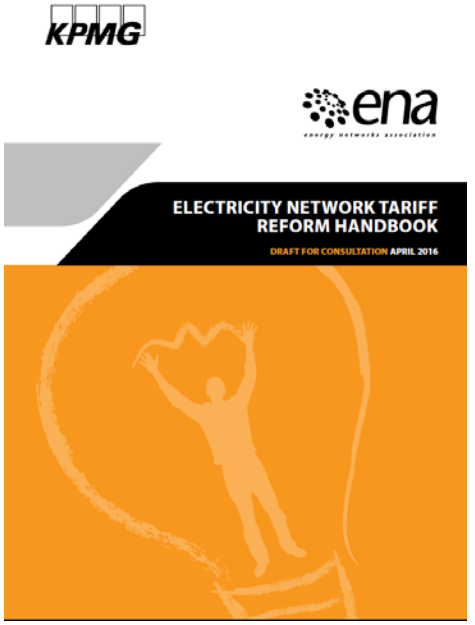
The Handbook has been released for public consultation until 9 May 2016.

Feedback from all stakeholders welcome.

Please contact us at info@ena.asn.au to provide your feedback or arrange a discussion.



Questions & Discussion…



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