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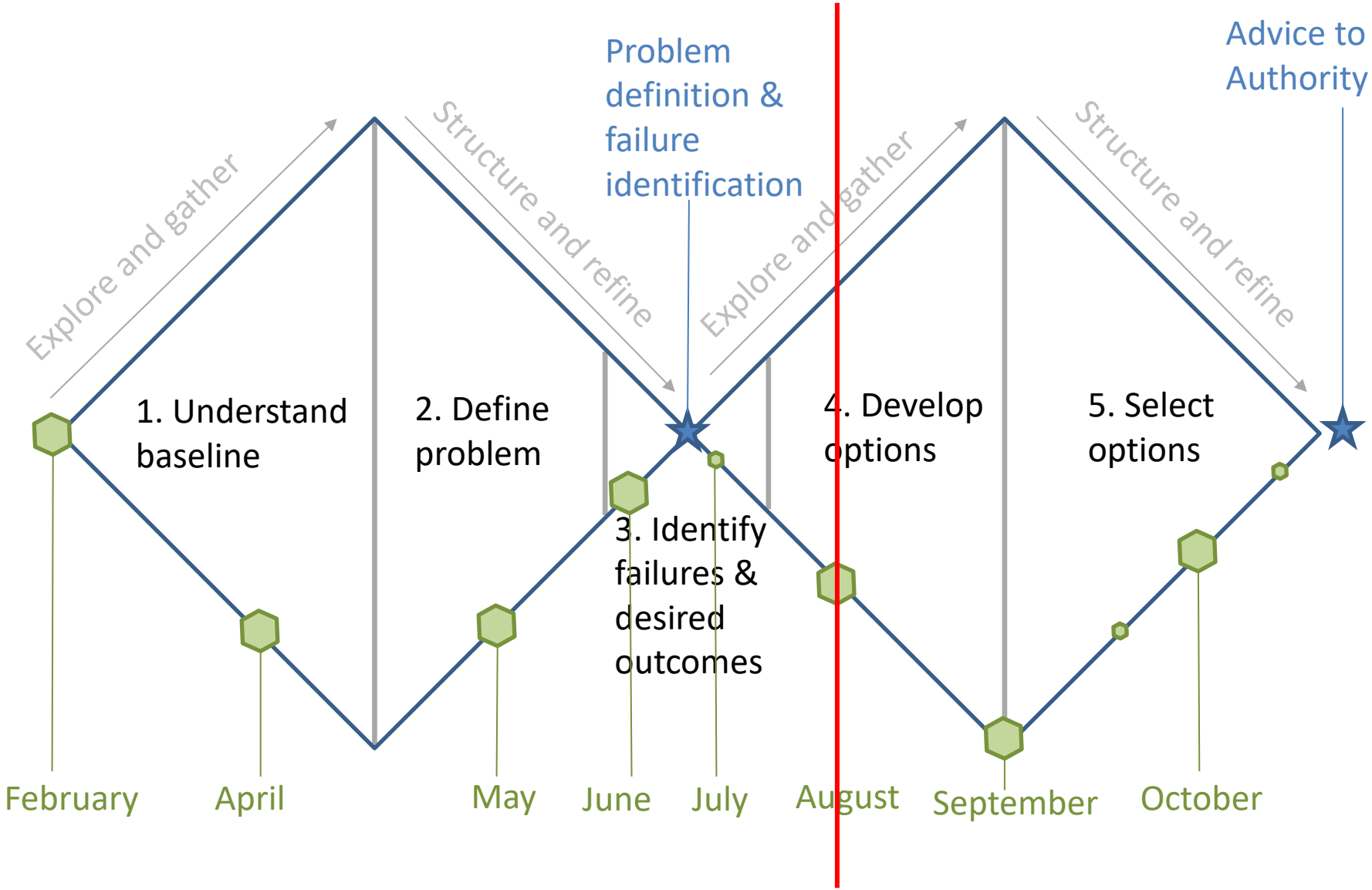
Input services – solution options

Innovation and Participation Advisory Group

IPAG secretariat

Project timeline



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In-scope input services

We have identified five in-scope input services:

1. Network services (connection and use of system)
2. Provision of certified meter data
3. Central reconciliation & settlement
4. Addressing existing meter APIs and relays (including control of customer load)
5. Communications services (to isolated sites)

Each of these input services relies on monopoly infrastructure and is required for at least one sub-ICP output service.

Solution principles

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Regulatory strategy principles

In assessing options, the IPAG will consider the regulatory strategy principles published by the Electricity Authority:

- As far as possible, adopt regulatory arrangements that move the problem over time to a situation where the first-best solution can be adopted.
- Where possible, avoid ‘one size fits all’ approaches to regulation when regulating parties that may exit the regulated activity.
- Adopt regulatory approaches that, over time, reveal more about the true nature of the problem and the true constraints on regulatory intervention so that more effective regulation can be designed as the regulatory problem and regulatory constraints are better understood over time. The aim is to address the cause, not the symptom.
- As much as possible, avoid the slippery slope of ever more intrusive interventions arising from poorly designed regulatory interventions.
- Avoid regulatory interventions that are not likely to be credible when adverse events occur.
- Strive to achieve regulatory predictability because this is particularly important when regulating high capital investment industries such as electricity.

These regulatory strategy principles are designed to complement the Authority’s overall approach to its role, which places an emphasis on a coherent holistic market design and competition and consumer choice to deliver efficient outcomes, supplemented by effective monitoring of market outcomes and wide dissemination of information

Code amendment principles

The Authority and its advisory groups will have regard to the following Code amendment principles:

- Lawfulness
- Clearly Identified Efficiency Gain or Market or Regulatory Failure
- Quantitative Assessment
- Preference for Small-Scale ‘Trial and Error’ Options
- Preference for Greater Competition
- Preference for Market Solutions
- Preference for flexibility to allow innovation
- Preference for non-descriptive options
- Risk Reporting

Desired outcomes and solution options – session 1

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Desired outcomes: network services (connection & UoS)

- Sub-ICP service providers have clear rights to access distribution network services and communications links.
- All distributors offer terms for supply and demand at sub-ICP level.
- DER connection policies are standard across the whole country, unless there is a material benefit of deviating from the national standard.

Solution options: Network service

- Amend code to reflect new rights for sub-ICP service providers to access network services
- Add sub-ICP services to default UoS agreements
- Standardise network connection arrangements for new technologies

Desired outcomes: central reconciliation and settlement

- Parties offering sub-ICP services can provide services without taking responsibility for all services at the ICP
- There is a central record of which sub-ICP supply and load control services are provided by whom.
- Sub-ICP supply and load control services can be switched just as ICP level ones currently are
- The Code provides for the most accurate data to be used at all times

Solution options: reconciliation and settlement

- Largely addressed by Authority's ACCES framework project
  - Central record of sub-ICP service providers
  - Allow sub-ICP service providers to participate in central reconciliation and settlement
  - Allow switching of sub-ICP services
- Amend switching processes to ensure that HHR AMI data takes precedence over NHH data or estimate over a longer timeframe.
- Introduce new arrangements for 'mobile ICPs', with certification requirements for meter data, and volumes netted from other ICPs in reconciliation and settlement.

Desired outcomes: addressing existing meter APIs and relays

- All parties valuing load control have a mechanism to signal their need and the value they place on it.
- All parties valuing load control can address the full flexibility that exists
- Anyone who is offering a flexibility service is able to allocate it to the highest value use.
- Parties valuing load control offer dynamic terms as well as terms that require firm and exclusive access to flexibility at a particular location.

Solution options: addressing existing meter APIs and relays

1. Allow participants to negotiate commercial terms with MEPs for access and control over sub-ICP devices via the meter
2. Require access to meter APIs, with mandated rights for registered sub-ICP service providers to control their respective channels
3. Require EDBs to show – if asked – the cost (in lower network charges) paid to ripple controlled loads as an alternative to poles and wires, and:
   - to allow another party to control it for a fee of no more than this cost
   - to accept any alternate service with lower cost and equivalent or better performance

Desired outcomes and solution options – session 2 (pricing principles)

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Desired outcomes: all services

- Prospective sub-ICP services face clear and transparent regime for input service charges. Charges are consistent with the outcomes of a workably competitive market.

Solution options: all services

1. Require commercial agreement for access to services (status quo)
2. League tables for participants agreeing access to services
3. Establish arbiter for cases where parties cannot agree terms
4. Define pricing principles that responsible party must adhere to when charging multiple parties
5. Define mandatory default arrangements for when commercial agreement cannot be reached (requires definition of default services)
6. Set prescribed maximum fees for defined services

Pricing principles

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Example pricing principles – distributed generation

Schedule 6.4:

- "Charges to be based on recovery of reasonable costs incurred by distributor to connect the distributed generator and to comply with connection and operation standards within the distribution network, and must include consideration of any identifiable avoided or avoidable costs"
- Connection charges must not exceed incremental costs
- If multiple DGs are sharing, division of costs:
  - Must be calculated to take into account relative expected peak of each DG
  - May have regard to % of assets used; relative share of expected maximum combined output; whether combined peak generation is coincident with peak network load.

But:

"…the current arrangements may not promote competitive neutrality. The regulated price ceiling may provide distributed generators with an artificial competitive advantage over grid-connected generators and also over other technologies that could compete with distributed generation in providing various services."

"Pricing of network services should be service-based, cost-reflective, subsidy-free and consistent with pricing that would apply in a workably competitive market. Common costs should be allocated in a way that minimises distortions to consumption and investment decisions."

https://www.ea.govt.nz/development/work-programme/pricing-cost-allocation/review-of-part-6-distributed-generation-pricing-principles/development/authority-decision-on-the-review-of-dgpps-and-acot/

Example pricing principles – distribution services (2019)

2019 Distribution Pricing Principles:

(a) Prices are to signal the economic costs of service provision, including by:
  - (i) being subsidy free (equal to or greater than avoidable costs, and less than or equal to standalone costs)
  - (ii) reflecting the impacts of network use on economic costs;
  - (iii) reflecting differences in network service provided to (or by) consumers;
  - (iv) encouraging efficient network alternatives

(b) Where prices that signal economic costs would under-recover target revenues, the shortfall should be made up by prices that least distort network use.

(c) Prices should be responsive to the requirements and circumstances of end users by allowing negotiation to:
  - (i) reflect the economic value of services; and
  - (ii) enable price/quality trade-offs.

(d) Development of prices should be transparent and have regard to transaction costs, consumer impacts, and uptake incentives.

https://www.ea.govt.nz/development/work-programme/pricing-cost-allocation/distribution-pricing-review/development/summary-of-submissions-and-decision-paper/

Example pricing principles – distribution services (2010)

2010 Distribution Pricing Principles:

(a) Prices are to signal the economic costs of service provision, by:

- (i) being subsidy free (equal to or greater than incremental costs, and less than or equal to standalone costs), except where subsidies arise from compliance with legislation and/or other regulation;
- (ii) having regard, to the extent practicable, to the level of available service capacity; and
- (iii) signalling, to the extent practicable, the impact of additional usage on future investment costs.

(b) Where prices based on 'efficient' incremental costs would under-recover allowed revenues, the shortfall should be made up by setting prices in a manner that has regard to consumers' demand responsiveness, to the extent practicable.

(c) Provided that prices satisfy (a) above, prices should be responsive to the requirements and circumstances of stakeholders in order to:

- (i) discourage uneconomic bypass;
- (ii) allow for negotiation to better reflect the economic value of services and enable stakeholders to make price/quality trade-offs or non-standard arrangements for services; and
- (iii) where network economics warrant, and to the extent practicable, encourage investment in transmission and distribution alternatives (e.g. distributed generation or demand response) and technology innovation.

(d) Development of prices should be transparent, promote price stability and certainty for stakeholders, and changes to prices should have regard to the impact on stakeholders.

(e) Development of prices should have regard to the impact of transaction costs on retailers, consumers and other stakeholders and should be economically equivalent across retailers.

https://www.ea.govt.nz/development/work-programme/pricing-cost-allocation/distribution-pricing-review/development/guidelines/

Example pricing principles – transmission services

Proposed transmission pricing mechanism (2019)

(a) a connection charge, to charge each designated transmission customer to recover the cost of the assets that connect it to the interconnected grid.

(b) a benefit-based charge, allocated between designated transmission customers in accordance with the estimated positive net private benefits that each transmission customer is expected to receive from the investment (or a proxy for these benefits)

(c) a residual charge, to provide a mechanism to ensure that Transpower is able to recover up to its forecast maximum allowable revenue in any year in a way which does not affect designated transmission customers' decision-making.

(d) a prudent discount policy, to allow Transpower to discount the transmission charges of a designated transmission customer who otherwise would find it viable to inefficiently bypass the grid

(e) a cap on transmission charges, to minimise price shock by limiting the total increase in transmission charges

(f) seven additional components

Possible pricing principles for sub-ICP services

Option 1: incremental charging

- Charges are based on the charges for a single service provider at an ICP
- Charges clearly identify the increase required to serve more than one party at an ICP
- Could include:
  - Connection charge – to recover the actual costs of changes to equipment and associated back office infrastructure
  - Ongoing charge reflecting the *incremental costs* of providing services to a 2nd/3rd/nth party at the same location
- Allows free riding

Option 2: service based charging

- Charges based on the service provided, without reference to the number of parties receiving the same service
- Could include:
  - Connection charge – to recover the actual costs of changes to equipment and back office infrastructure
  - Ongoing charge reflecting *differences in service* provided to each party, including economic value of the service to that party
- No explicit consideration of “under-recovery” or “prudent discount” policies
- Allows exercise of market power

Example capped pricing – distributed generation

Schedule 6.5:

A distributor may require the payment of fees for any of the following activities prescribed under Part 6 of this Code to the maximum fee specified in the column opposite that activity:

Description of fee	**$ (exclusive of GST)**
Part 1 of Schedule 6.1 application	
Application fee under clause 2(2)(c)	200
Fee for observation of testing and inspection under clause 7(5)	60
Part 1A of Schedule 6.1 application	
Application fee under clause 9B(2)(c)	100
Fee for inspection under clause 9C(3)	60
Deficiency fee under clause 9E(4)	80

Part 2 of Schedule 6.1 application	
Application fee for **distributed generation** with **nameplate capacity** of more than 10 kW but less than 100 kW under clause 11(2)(c)	500
Application fee for **distributed generation** with **nameplate capacity** of 100 kW or more in total but less than 1 **MW** under clause 11(2)(c)	1,000
Application fee for **distributed generation** with **nameplate capacity** of 1 **MW** or more under clause 11(2)(c)	5,000
Fee for observation of testing and inspection of **distributed generation** with	120