CAREC ENERGY

economics
public policy
markets
strategy

MARSDEN JACOB ASSOCIATES

CAREC ENERGY
REFORM ATLAS

VULNERABLE CONSUMER TOOLKIT

19 November 2021

A Marsden Jacob Report

Prepared for Asian Development Bank
Marsden Jacob Associates Pty Ltd
ABN 66 663 324 657
ACN 072 233 204

e. economists@marsdenjacob.com.au
t. 03 8808 7400

Office locations
Melbourne
Perth
Sydney
Brisbane
Adelaide

Citation:
Marsden Jacob Associates 2021. *CAREC Energy Reform Atlas – Vulnerable Consumer Toolkit,* Sydney, Marsden Jacob Associates Pty Ltd.

Authors
Cameron O'Reilly Associate Director

LinkedIn - Marsden Jacob Associates
www.marsdenjacob.com.au

Acknowledgements
Marsden Jacob consulted widely for this report. We would like to acknowledge and thank all the people we engaged with during this project. The report is better for your input. All final recommendations and views in this report are attributable to Marsden Jacob unless otherwise stated.

MARSDEN JACOB ASSOCIATES

Contents

1. Introduction to report 3
2. Energy in the CAREC region 3
2.1 The Energy Trilemma 4
2.2 Energy challenges in the CAREC region 5
3. Vulnerable Consumers and Energy Reform 7
4. Defining Vulnerable Consumers 9
5. Options to support Long-term Vulnerable Consumers in Energy Markets 11
5.1 Social or Vulnerable Consumer Tariffs 11
5.2 Direct financial support to Vulnerable Consumers from Government 13
5.3 Specific regulations applied to Vulnerable Consumers 13
5.4 Energy Efficiency programs targeted at Vulnerable Consumers 14
5.5 Information programs targeted at Vulnerable Consumers 15
5.6 Technology options to support Vulnerable Consumers 16
5.7 Providing consumer choice of supplier through competition 17
6. Temporary Vulnerability in Energy Markets 18
7. Vulnerable Consumers Options Analysis 19

Tables

Table 1 - Non-hydro renewables installed in CAREC member countries. IRENA. 2018 6
Table 2 - Advantages and Disadvantages of Vulnerable Consumer Options 19

Figures

Figure 1: World Energy Council Trilemma Index - top rankings 5
Figure 2: Investment in the Power Sector – Recent outcomes and projections. Source IEA 7
Figure 3: Consumers International Global Survey of Member Priorities 8

1. Introduction to report

The Central Asia Regional Economic Cooperation (CAREC) Energy Strategy 2030 invokes a vision for the region based on common borders, common solutions, and a common energy future. In a physical sense, this will be realised through increasing interconnection between the energy systems of the eleven countries that make up CAREC. In a policy and reform sense, it will be apparent through cooperation in energy market reforms.

Alongside the effort to implement market-oriented reform, a cross cutting theme of the Strategy is Building Knowledge. The Energy Reform Atlas is a resource to support market orientated reforms through sharing knowledge and experience. This report addresses one aspect of the Reform Atlas - the protection of vulnerable consumers.

How to protect vulnerable energy consumers is an ongoing challenge in all energy markets. The issue takes on added importance in the context of market reform programs, where reform usually means changes to the pricing of energy.

The success or otherwise of reforms often depends on how they are accepted by consumers in the reforming energy market. Managing, or at least ameliorating reform impacts on vulnerable consumers can help reform objectives be realised.

There is no single solution to meeting the requirements of vulnerable consumers. Instead, there is a menu of options available to policymakers.

This report draws on public policy research, examples of government initiatives and detailed case studies to present some of the vulnerable consumer options open to CAREC decision-makers as they embark on market reforms.

2. Energy in the CAREC region

The eleven countries of the CAREC region provide energy to over 1.7 billion consumers. This figure is greatly skewed by the inclusion of China with 1.4 billion consumers and Pakistan with over 200 million. The total market size of the remaining nine countries in CAREC is around 130 million consumers.

In terms of electrification, access to grid electricity is high in the CAREC region. Nearly all CAREC member countries have achieved electrification above the global average rate of 89%, with many approaching 100%.[1] Indigenous sources of fuel across the region are abundant and some CAREC members are significant energy exporters.

[1] Word Bank press release, 22 May 2019. “More People have access to electricity than ever before…”.

Aside from high access to electricity, CAREC consumers generally pay below average prices for electricity. In its recent work on the tariff reform toolkit which forms part of the CAREC Energy Reform Atlas, London Economics International (LEI) estimated that the average residential price of electricity in the CAREC region was US 5 cents KW/h, while for non-residential it averaged US 7 cents KW/h.[2]

According to the International Energy Agency (IEA) the global average price for residential electricity is US 13.6 cents KW/h. One CAREC member country, Turkmenistan has the lowest residential electricity prices in the world.

Low prices, especially if achieved through use of subsidies, can sometimes come at the expense of other objectives such as reliability of supply. Reliable electricity can be just as important to a consumer. A business needs reliable electricity to be confident it can supply its product to consumers, while a household's quality of life can be severely impacted when electricity is unreliable.

Increasingly with the impact of climate change, electricity that is environmentally sustainable may also be valued by the community. Low carbon forms of generation are becoming cost competitive and sustainability objectives are not necessarily at odds with affordability objectives.

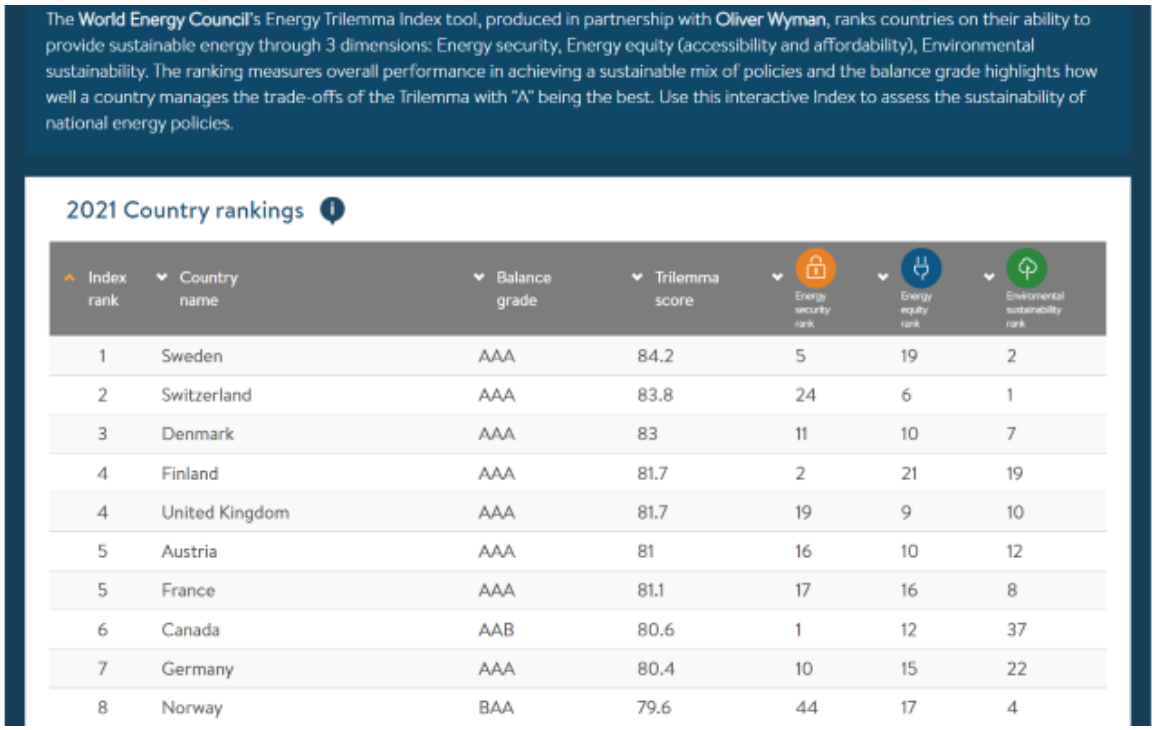
2.1 The Energy Trilemma

The Energy Trilemma is a concept that is increasingly used to assess electricity system performance. The three criteria that make up the Trilemma are affordability, reliability/security, and sustainability. A system that balances the three objectives is seen to deliver optimal performance. With reductions in the cost of renewable energy, coupled with advances in technologies such as storage, pursuit of all three objectives is not seen as mutually exclusive.

The World Energy Council ranks national electricity systems based on their management of the Energy Trilemma.

[2] London Economics International. Inception Report. Energy Sector Reform under CAREC program. January 20, 2021. P7

Figure 1: World Energy Council Trilemma Index - top rankings



The **World Energy Council**'s Energy Trilemma Index tool, produced in partnership with **Oliver Wyman**, ranks countries on their ability to provide sustainable energy through 3 dimensions: Energy security, Energy equity (accessibility and affordability), Environmental sustainability. The ranking measures overall performance in achieving a sustainable mix of policies and the balance grade highlights how well a country manages the trade-offs of the Trilemma with "A" being the best. Use this interactive Index to assess the sustainability of national energy policies.

2021 Country rankings

Index rank	Country name	Balance grade	Trilemma score	Energy security rank	Energy equity rank	Environmental sustainability rank
1	Sweden	AAA	84.2	5	19	2
2	Switzerland	AAA	83.8	24	6	1
3	Denmark	AAA	83	11	10	7
4	Finland	AAA	81.7	2	21	19
4	United Kingdom	AAA	81.7	19	9	10
5	Austria	AAA	81	16	10	12
5	France	AAA	81.1	17	16	8
6	Canada	AAB	80.6	1	12	37
7	Germany	AAA	80.4	10	15	22
8	Norway	BAA	79.6	44	17	4

For some, the Trilemma favours the richest countries in the world, but the desire for an electricity system that delivers reliable, sustainable, and affordable electricity, is not restricted to those countries.

Goal 7 of the UN General Assembly Agenda for Sustainable Development adopted in 2015 was to "ensure access to affordable, reliable, sustainable and modern energy for all".[3]

Electricity consumers are not homogeneous, and it is often those who fit the category of vulnerable who put the highest emphasis on affordability. For that reason, vulnerable consumer policies are more effective and compatible with other objectives like reliability when targeted at vulnerable consumers rather than applied across the whole market.

2.2 Energy challenges in the CAREC region

While accessibility and affordability of electricity in the CAREC region may be high, the electricity systems across the CAREC region face many challenges.

Those challenges include:

- High levels of energy intensity in many of the countries.
- Low levels of interconnection between countries.

[3] United Nations Department of Economic and Social Affairs. 2030 Agenda for Sustainable Development. 17 goals adopted by UN General Assembly in 2015. Goal 7 – Affordable and Clean Energy.

- An absence of price signals to consumers which contributes to poor energy efficiency performance.
- Reliability challenges and low investment in infrastructure arising from subsidies.
- Limited reform of vertically integrated, mainly government owned energy utilities and limited market competition.
- High dependence on fossil fuels for energy generation making for increased risks from climate change.
- Very little installation of non-hydro renewables across the region.

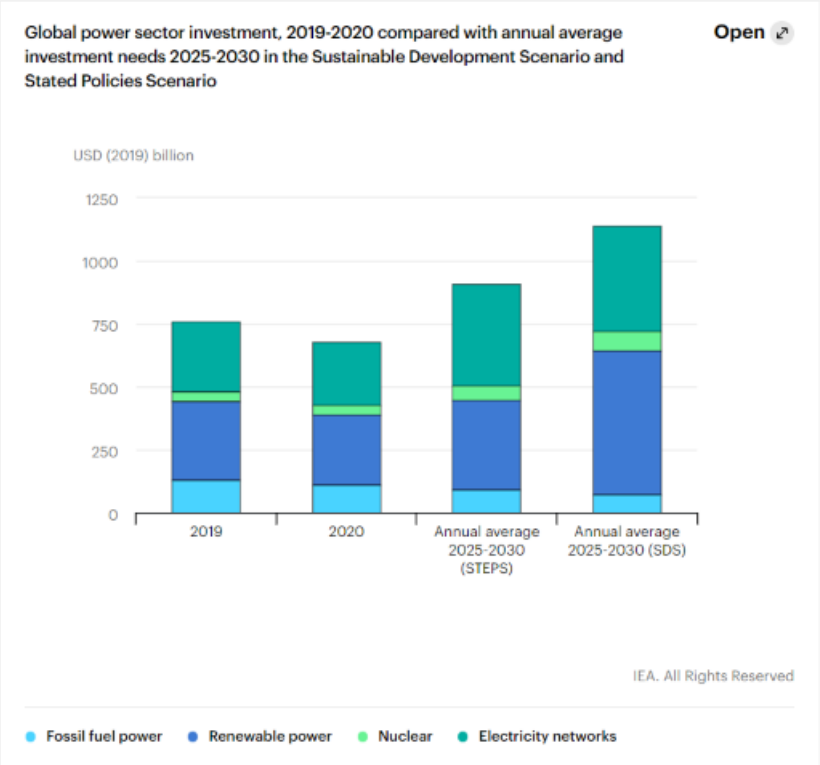
Table 1 - Non-hydro renewables installed in CAREC member countries. IRENA. 2018

Country	% of supply from non-hydro renewables
Afghanistan	4.9
Azerbaijan	1.4
China	24.4
Georgia	0.4
Kazakhstan	8.2
Kyrgyz Republic	0
Mongolia	16.6
Pakistan	5.0
Tajikistan	23.1
Turkmenistan	0.1
Uzbekistan	0.03

Some of the countries in CAREC are blessed with quality hydro resource and face less imperative to decarbonise supply. Overall, the region's electricity supply is however carbon intensive, making for a significant sustainability challenge into the future.

With the global imperative to address climate change, capital markets are increasingly favouring renewable energy over fossil fuels. Reform will be essential to attract this capital to the CAREC region. Decarbonisation usually requires significant investment in both generation and electricity networks to link the renewable energy sources to consumers.

Figure 2: Investment in the Power Sector – Recent outcomes and projections. Source IEA



At the heart of the CAREC region's challenges in energy reform are the extensive use of economy-wide energy subsidies. This has meant that price has taken precedence over other objectives for the electricity systems.

If the CAREC region is to move beyond a pure focus on price, addressing energy subsidies will be an essential part of the reform challenge.

When electricity prices are kept low through subsidies, there is a broader societal "opportunity cost". Funds that may be used for energy subsidies could have been invested in other government priorities such as health and education.

Moving away from subsidised electricity pricing can be challenging, especially at household level.

A vulnerable consumer strategy is one way to assist policymakers with this adjustment to more cost reflective and transparent approaches to energy pricing.

3. Vulnerable Consumers and Energy Reform

Energy is both an essential service and an input to nearly every good and service produced by an economy. The existence of universal energy subsidies is expensive to a country's budget and beneficial to the wealthy, in that the value capture of the subsidy is greatest by those who purchase the largest amount of goods and services.

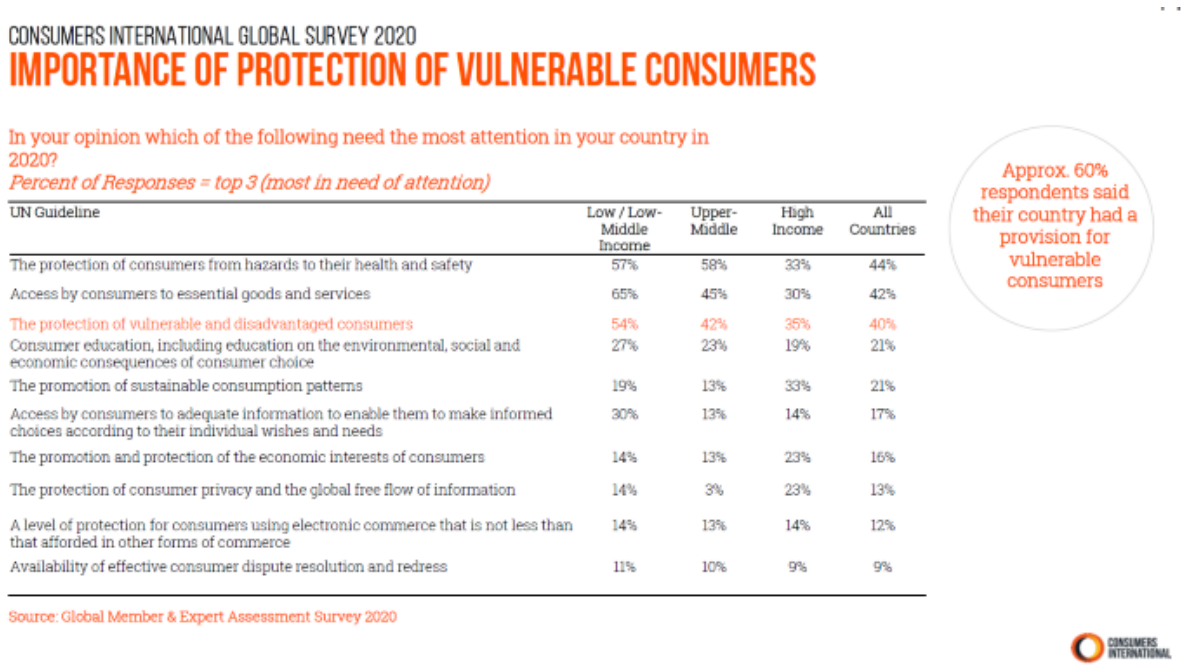
Energy subsidies are also wasteful by encouraging excessive consumption and reducing incentives for energy efficiency and conservation.

Where energy subsidies support fossil fuels, they are also damaging to the environment through increased carbon emissions.

Removing energy subsidies is regressive, in that lower income consumers generally spend a higher percentage of their earnings on energy. For residential consumers energy is used for essential heating/cooling, cooking and transport. Price increases can therefore impact quality of life and in some cases, the safety of the consumer.

Energy expenditure not only accounts for a higher percentage of low-income consumers' expenditure within countries, but also between countries. Less well-off countries often need to be more conscious of the impact of energy reforms than wealthy countries. A survey by Consumers International, a federation of consumer organisations with 200 members across 100 countries showed that vulnerable consumer policies were prioritised most by developing country members.

Figure 3: Consumers International Global Survey of Member Priorities



UN Guideline	Low / Low-Middle Income	Upper-Middle	High Income	All Countries
The protection of consumers from hazards to their health and safety	57%	58%	33%	44%
Access by consumers to essential goods and services	65%	45%	30%	42%
The protection of vulnerable and disadvantaged consumers	54%	42%	35%	40%
Consumer education, including education on the environmental, social and economic consequences of consumer choice	27%	23%	19%	21%
The promotion of sustainable consumption patterns	19%	13%	33%	21%
Access by consumers to adequate information to enable them to make informed choices according to their individual wishes and needs	30%	13%	14%	17%
The promotion and protection of the economic interests of consumers	14%	13%	23%	16%
The protection of consumer privacy and the global free flow of information	14%	3%	23%	13%
A level of protection for consumers using electronic commerce that is not less than that afforded in other forms of commerce	14%	13%	14%	12%
Availability of effective consumer dispute resolution and redress	11%	10%	9%	9%

For these reasons it is vital that energy reforms involving the removal of subsidies and the introduction of cost reflective pricing consider distributional impacts. Distributional impacts that fall greatest on those with the lowest capacity to pay can then be addressed through targeted support measures to offset the impact of the reforms. These interventions will be less costly and distortionary to a government's budget and an economy than universal subsidies.

Targeted measures focused on vulnerable consumers can help ensure the success of energy reforms by providing support to those most in need. They work most effectively when the measures operate in conjunction with tariff reform and cost-reflective pricing.

Efficiently pricing energy economy-wide will provide a better business case for energy efficient behaviour and technologies. Interventions focused on energy efficiency can also be targeted at those most in need.

Measures targeted at vulnerable consumers are most effective when eligibility is clearly defined. A vulnerable consumer policy that is too broad is likely to be too costly to a government's budget and will diminish some of the efficiency gains from cost reflective pricing of energy.

It is also important to distinguish between long-term and temporary vulnerability.

Temporary vulnerability may arise from a life event such as unemployment, a natural disaster, or an accident, from which recovery is possible.

Interventions focused on temporary vulnerability will often be different to those focused on long-term vulnerability. For instance, many countries introduced temporary energy support measures because of the COVID-19 pandemic.

This report will focus mainly on consumers who fit the definition of long-term vulnerable and consider a range of options to assist them with the distributional impacts of price changes arising from energy reform.

4. Defining Vulnerable Consumers

Vulnerable consumers are defined or categorised in several ways across countries. In terms of a generic definition, academics Andreasen and Manning defined them in the following way in 1990.[4]

"Vulnerable customers are those who are at a disadvantage in exchange relationships when that disadvantage is attributable to characteristics that are largely not controllable by them at the time of the transaction."

In official definitions vulnerable consumers are generally identified in most countries based on demographic characteristics. The most common are:

- Age
- Income
- Employment status
- Health
- Education levels
- Housing situation (owning, renting, public housing)

[4] Andreasen A. Manning J. "The dissatisfaction and complaining behaviour of vulnerable customers". Journal of Consumer Satisfaction. Volume 3. Issue 1. 1990. P – 12-20.

Other characteristics that could be added are gender, which in many countries may coincide with employment status, urban or rural location or immigration status (e.g refugee).

There is also the question of household size.

A consumer may be a single person household or the energy account holder for a family of vulnerable consumers. Support mechanisms need to adjust in line with how many consumers are covered by the vulnerable consumer intervention.

Another consideration in relation to vulnerability can be climate. Particularly in colder climates, equitable and affordable access to energy for heating by vulnerable consumers can be a matter of life or death.

While not a cold climate, a winter storm in Texas in February 2021 which led to electricity outages across the State that lasted many days, is estimated to have led to the deaths of over 200 people.[5]

A country's climate may therefore require tailored measures to address seasonal vulnerability.

The European Union (EU) which has adopted a range of Europe wide directives on energy market reform and liberalisation has not adopted a single definition of vulnerable consumer. It did, however, establish an EU Vulnerable Consumer Working Group in 2011 which aims to bring member countries together to work on three areas.[6]

The areas of focus for the EU Vulnerable Consumer Working Group are:

1. Quantitative and qualitative measures of vulnerable consumers.
2. Defining vulnerable consumers eligible for assistance measures.
3. Highlighting good practices in assisting vulnerable consumers.

The broad concept of a vulnerable consumer in an energy market is a universal concept applied differently across borders.

That said, there are a range of approaches that are common across the world from which policy makers can learn. Those are addressed in the next section and supported by examples.

Comprehensive case studies on how vulnerable consumer issues are addressed in relevant countries are provided in a supplementary report.

—

[5] Donald, J. "Winter Storm Uri 2021 – The Economic Impacts of the Storm". Comptroller.texas.gov October 2021.
[6] EU Vulnerable Consumer Working Group. Guidance Document on Vulnerable Customers. November 2013. P9

5. Options to support Long-term Vulnerable Consumers in Energy Markets

Having established definitions of vulnerable consumers there are a range of approaches open to countries to deal with energy disadvantage. They include special "social tariffs" only accessible by vulnerable consumers, specific forms of financial support from government which may or may not be confined to energy bills, policies and regulations imposed on suppliers that apply only to vulnerable consumers, initiatives that focus on energy efficiency in housing populated by vulnerable consumers and education or public information campaigns targeted at the vulnerable.

Increasingly digital technology such as smart meters that enable demand response and distributed generation are also being used in a targeted way to reduce the energy costs of the vulnerable. Supplier choice and digital tools to allow consumers to compare tariffs from competing energy suppliers is another mechanism that has been embraced in reformed energy markets. This approach is only possible when cost-reflective pricing has been implemented.

In general, the vulnerable are assumed to have lower than average consumption, but this may not always be the case. If the vulnerable consumer is a large household with dependents consumption may be above average. Attempts to manage energy bills through lower usage need to be wary of self-rationing that presents risks to the vulnerable consumer (s), especially where heating and cooling are involved.

Examples of each approach are covered in the next section and supported by case studies. It should be noted that most examples are sourced from the European Union (EU) as it maintains the most comprehensive multilateral database of measures undertaken to assist vulnerable consumers.

A study by the University of Stuttgart in 2016 identified 278 individual vulnerable customer measures taken by the 27 member countries of the EU.[7]

Most EU countries have significant seasonal variations in climate, as do most CAREC countries.

Climatic conditions are relevant to approaches to vulnerable consumers as weather is often a major determinant of energy usage and patterns.

5.1 Social or Vulnerable Consumer Tariffs

One approach to assisting vulnerable consumers is to implement special tariffs which only they are eligible to receive. Criteria for eligibility are established and energy companies are required to provide the special tariff to consumers who meet the eligibility criteria.

[7] Dobbins. A "Energy poverty and vulnerable consumers in the energy sector across the EU – analysis of policies and measures", Institute of Energy Economics and Rational Use of Energy, University of Stuttgart. March 16, 2016.

The tariff can be designed around usage levels or other criteria like a percentage of the consumer's income. The latter approach may vary if the consumer is a single person household, or the account holder for a large household.

While sometimes complicated for governments and energy companies to administer as they are restricted to a sub-set of vulnerable consumers, they are less distortionary than subsidising or capping tariffs for all consumers.

The level of a social tariff is sometimes set by an independent regulator or directly by a government.

Options include a discount against a standard tariff or a hard cap on what the vulnerable consumer can be charged based on estimated prices and usage.

5.1.1 Case Study – Portugal – Extraordinary Social Support for the Energy Consumer

Extraordinary Social Support for the Energy Consumer (ESSEC) is a discount on an electricity or gas bill directly applied by the government to bills of eligible consumers. Eligible customers must make an application with their energy supplier to receive the ESSEC discount and the company checks the application with the relevant government agency.

Those customers eligible for the discounted tariff from their suppliers are:

- The elderly, the unemployed, children and people with disabilities.
- People receiving government social benefits or with an income below a legislated minimum.
- Citizens with a contracted energy use of up to 4.6 KV of electricity and an annual threshold of gas usage per year.

In 2016 the number of Portuguese consumers receiving the tariff was estimated to be 630,000 with the discounts applied to the standard tariff amounting to 33.8% for electricity and 31.2% for gas.[8]

5.1.2 Case Study – Belgium – Belgium Social Tariff

Since 2004 Belgium has maintained a social tariff for gas and electricity which is linked to the place of residence. The tariff is accessible by consumers receiving low-income support payments, people receiving disability payments, those receiving aged pensions, those receiving an integration allowance and for residents of social housing. The social rate must be applied by all energy suppliers to those receiving approved government payments, but only applies to gas for social housing residents and is paid once a gas supply agreement has been made. By 2016, 460,000 residents were receiving the social tariff representing around 8 % of the market.[9]

[8] Atlas of Energy Poverty Initiatives in Europe. State by State Review. Ecoserveis. April, 2017. P45
[9] www.economie.fgov.be – General Directorate Energy, Government of Belgium. Social Energy.

5.2 Direct financial support to Vulnerable Consumers from Government

While a social tariff is a discounted rate for energy services to eligible vulnerable consumers, another option is for vulnerable consumers to receive direct financial payments from government to help them pay energy bills charged at the same rate as all consumers.

These can be provided by way of payments from government to vulnerable consumers specifically for energy bills, using mechanisms such as vouchers or rebates. Alternatively, they can be more general financial assistance provided to vulnerable households for living costs, with energy one of the approved eligible costs. The risk with the second approach is that government payments are used for purposes other than energy.

Direct financial assistance to the consumer from government involves less distortion of energy markets as it does not involve specific pricing for vulnerable consumers. It will generally mean less administrative burden for energy suppliers.

On occasions, government assistance may be limited to times of the year when energy costs will be higher, such as winter in colder climates. An example of such a measure being the Winter Fuel Payment in the United Kingdom.[10]

5.2.1 Case Study – France – Energy Vouchers

In 2018, the national government of France introduced a system of energy vouchers for eligible vulnerable consumers that replaced a social tariff. Access to the scheme is determined based on income and vouchers are paid directly to consumers which can only be used for energy bills. They are currently received by some 5.5 million households in France. Vouchers are administratively simple and can be adjusted in line with circumstances, with a special one-off payment being made to voucher recipients in 2021 in response to higher gas costs across Europe.[11]

5.2.2 Case Study – Ireland – Fuel Allowance & Household Benefits Package

Since 1988 the national government of Ireland has provided a Fuel Allowance & Household Benefits Package as part of its general income support arrangement for lower income households. The fuel allowance part of the support payments is often adjusted during winter months and specific changes were made when a carbon tax was introduced in Ireland. Approximately 400,000 Irish households receive the package, a high number in a population of just 5 million.[12]

5.3 Specific regulations applied to Vulnerable Consumers

Another approach to vulnerable consumers is applying specific regulations on energy companies on how they deal with the vulnerable. These may be imposed by a government or an energy regulator who may oversee compliance with the regulations. These are distinct from pricing regulations like a

—

[10] www.gov.uk/winter-fuel-payment
[11] EU Energy Poverty Observatory. Member State Reports on Energy Poverty. 2019. P41
[12] EU Energy Poverty Observatory 2019. P 57

social tariff. Examples include bans on certain actions by energy companies like disconnecting vulnerable consumers for non-payment, specific steps that must be taken to support vulnerable consumers experiencing payment difficulties and support for vulnerable consumers to help manage their energy bills through energy efficiency advice, practices, and investments.

5.3.1 Case Study - Austria – Energy Efficiency Obligation System for Energy Suppliers

Under this scheme, Austrian energy suppliers are required to initiate and prove energy efficiency measures equivalent to at least 0.6% of their total energy supply to end consumers in the previous year. At least 40% of the measures must be implemented at household level to avoid too much focus on large users like business. Compliance with the scheme is monitored by an independent body and the savings must be received by the end consumer. While not specific to vulnerable consumers, given they spend a higher percentage of their income on energy, savings are of greater relative value to them. There is an increasing focus on low-income consumers in the obligation scheme.[13]

5.3.2 Case Study - Finland – Disconnection protection in Winter

Recognising the essential nature of energy, and the implications of its denial in a cold climate, energy companies in Finland have special regulations imposed on their ability to disconnect consumers for non-payment. In Finland, these regulations apply across electricity and gas and are in place between 1 October and 30 April each year. During this period, households cannot be disconnected for non-payment even if they have accumulated a debt with their energy supplier.[14]

5.4 Energy Efficiency programs targeted at Vulnerable Consumers

In recognition that vulnerable consumers often spend a higher percentage of their income on energy, and, for instance, are at home more than other households in the case of the elderly or severely disabled, targeted energy efficiency programs are recognised as an effective assistance measure for vulnerable consumers. Vulnerable consumers often lack the financial means to invest in energy efficiency measures and technologies. In the case of those renting properties who, again are more likely to be vulnerable, there are “split incentives” where landlords who invest in energy efficiency do not capture the benefits when energy bills are paid by tenants.

Investments in better insulation, LED lighting and more energy efficient household appliances deliver recurring benefits to vulnerable consumers but are often inaccessible to them due to up-front costs. When delivered through targeted public investment, the pay-back in terms of reduced energy bills can be more effectively captured by vulnerable consumers than general energy efficiency schemes applied to energy companies.

[13] Atlas of Energy Poverty Initiatives in Europe. Ecoservais. P12
[14] EU Member State Reports on Energy Poverty. 2019. P37

5.4.1 Case Study - Netherlands – Incentive Scheme to Improve Energy Performance of Social Housing

This program is delivered by the National Government and is open to social housing owners to improve the energy efficiency of their portfolio. Higher energy efficiency gains are rewarded with higher subsidies from the government. Owners can choose between measures targeted at the building or individual residents. The energy costs for residents cannot be increased in the years after the efficiency renovations are completed. To date, 28% of Netherlands social housing properties have received upgrades under the program.[15]

5.4.2 Case Study - Romania – Improving Energy Efficiency in Low Income Households and Communities

This program was developed by the United Nations Development Program (UNDP) and sought to remove barriers to the implementation of energy efficiency measures in one of the poorer members of the EU. The program combined policy measures with capacity building and stimulating a market for energy efficient building products in Romania. The measures developed were specific to Romanian conditions and focused on technical specifications for over fifty types of buildings in the country. A market for locally developed building insulation materials was stimulated. The program ultimately helped 160,000 Romanians living in largely low-income housing to enjoy better insulation.[16]

5.5 Information programs targeted at Vulnerable Consumers

Capital based programs to improve vulnerable consumers' access to energy efficiency can also be combined with programs and interventions focused on energy literacy and energy efficient behaviour. This human intervention is again able to be targeted at often at-risk vulnerable groups. It once again recognises that value of energy efficient behaviour is greatest to those who spend a higher percentage of their income on energy. Delivery of such programs is open to a range of platforms. Given vulnerable customers often have less access to digital technology, face to face delivery approaches are favoured.

5.5.1 Case Study – Belgium – Free Energy Tutors Project

In the Wallonia region of Belgium funding has been provided to "energy tutors" who provide practical advice on behavioural and physical changes that can be made in a vulnerable household to save on the costs of energy. Small investments on such things as more energy efficient lighting may also be funded by the tutor, but the focus is on face-to-face advice to the householders on how to reduce energy use. The tutors are trained to do audits of the target households and are funded and

[15] EU Member State Reports on Energy Poverty. 2019 P82
[16] Atlas of Energy Poverty Initiatives in Europe. Ecoservais. 2017 P47

are employed by a non-government organisation (NGO). It is estimated 5,300 vulnerable households in Wallonia have received support from the program.[17]

5.5.2 Case Study – United Kingdom – Energy Cafes

Energy café is an energy advisory service run by an NGO in London to support vulnerable consumers. It is staffed by volunteers trained in energy market and energy efficiency advice services. The advice includes such things as reading energy bills, energy efficient behaviour and how to access energy services. The "cafes'" are mobile and focused on areas with high levels of vulnerable consumers. The aim is to train other community representatives to ensure a wider reach for the service.[18]

5.6 Technology options to support Vulnerable Consumers

Traditionally, the energy industry has operated with a limited amount of consumer engagement based upon a linear supply model from generator to consumer. Interaction with the consumer was often limited to the connection process and the payment of energy bills. An energy meter which kept a record of a consumer's energy use was the basis of the financial relationship between the energy supplier and the consumer.

Increasingly, digital energy meters enable a more interactive relationship between consumers and suppliers and the ability to offer savings based on the time that energy is used. They also help consumers track their energy usage and costs and manage affordability issues.

While not seen as ideal technology for vulnerable consumers given, they are often unable to shift load and may engage in rationing of an essential service, there have been products developed that are specifically targeted at vulnerable consumers. Pre-payment of energy that enables vulnerable consumers to use energy up to a budgeted amount is one approach that has been trialled.

A second technology approach has been to address the barriers vulnerable consumers face to accessing self-generation options such as rooftop solar, the cost of which has been declining worldwide.

The up-front costs of installation and split incentives arising from the high propensity of vulnerable consumers to be renters has limited vulnerable consumer access to the lower cost of self-generated electricity. The technology is also limited in certain climates and difficult to access in countries where vulnerable consumers are in high density, usually urban built environments.

5.6.1 Case Study – New Zealand – Globug

Globug is a digitally enabled platform to allow consumers to access pre-paid electricity, which can be offered to vulnerable consumers at a concessional rate. It has been used in New Zealand to help consumers avoid or manage their way out of energy debt. It provides an interactive traffic light

[17] Atlas of Energy Poverty Initiatives in Europe. Ecoservais. 2017 P15
[18] Atlas of Energy Poverty Initiatives in Europe. Ecoservais. 2017 P74

warning system that alerts consumers when their balance is in credit, getting low or is negative and likely to lead to disconnection. The consumer has multiple options to top-up their account before disconnection and can quickly be reconnected once the account is topped up as the digital meters allow this to be done remotely. Consumers can receive alerts on their balance by a range of means including low technology options like a phone call.[19]

5.6.2 Case Study – NSW, Australia – Solar for Low Income Households Program

In Australia's most populous state, New South Wales, the state government has introduced a trial program aimed at extending access to rooftop solar systems to low-income households. Free solar systems are provided to participating households in return for them forgoing their current energy rebates provide by the government. It is estimated by the NSW Government that the savings from the rooftop solar will exceed the value of the vulnerable consumer's annual energy rebate. Effectively the consumer pays for the free solar system with foregone rebate payments from the state. [20]

5.7 Providing consumer choice of supplier through competition

As energy market reform programs mature, another option to assist vulnerable consumers achieve better energy outcomes is to implement competition in choice of supplier. To date, this has mainly occurred in wealthy countries. If cost reflectivity is implemented, it is possible in any market.

The highest cost components of an energy price are usually generation and networks costs. If generation and network charges are set at cost-reflective levels, then it is possible for the final stage of energy delivery, the selling of energy to a consumer, to be a competitive market.

All the sellers/retailers of energy to consumers need to be able to have access to generation and use of the energy networks on equal terms, and then through innovation in tariffs and efficiency in service delivery retailers can offer consumers different products/prices.

The benefit of the competition between suppliers is that they may offer tariffs more suited to the consumption pattern of a consumer, including a vulnerable consumer. The consumer also has greater bargaining power with their energy supplier and will switch supplier if unhappy with the tariffs or service offered by their provider.

Retail energy competition can operate in conjunction with a range of the other measures to assist vulnerable consumers so long as those measures are open to all suppliers.

Where retail competition has been implemented, governments often establish free comparison services to allow vulnerable consumers to choose the product most suited to their needs.

—

[19] www.globug.co.nz

[20] www.energysaver.nsw.gov.au/solar-low-income-households

6. Temporary Vulnerability in Energy Markets

In general, approaches to vulnerable consumers have focused on long-term indicators of disadvantage. Periods of vulnerability can, on occasions, be temporal. Examples may include a natural disaster, a period of temporary unemployment, a temporary illness or a period impacted by a major change in government policy, such as the implementation of a carbon price.

The COVID-19 lockdowns imposed by governments around the world to reduce the transmission of the virus, are another example where energy support measures of a temporary nature have been introduced. These have acknowledged both the impact of the lockdowns on economic activity, and the increased use of energy in the home because of stay-at-home orders.

Such measures may increase hardship for long-term vulnerable consumers and, while the conditions prevail, add to the pool of vulnerable energy consumers. The circumstances may warrant both an increase in existing measures, extension of eligibility for existing measures and/or the introduction of new time limited support measures. The surge in winter fuel costs in Europe in 2021 is leading to both expanded existing and additional vulnerable consumer initiatives.

Compared with long-term vulnerability, there are less options to deal with temporary hardship. Most have been a combination of regulatory actions, such as disconnection bans and requirements on energy companies to offer longer payment terms, and direct financial support from government. These measures can usually be introduced and removed in the shortest time frame.

The lifespan of temporary support measures needs to be linked to the circumstances in which they have been introduced. COVID 19 restrictions have now impacted consumers for a year and a half, which means support has been over an extended period and over a large part of the population.

That type of support is very different to what might be required where a part of a country has been impacted by a natural disaster or where an individual consumer has experienced a loss of employment or ill health.

In general, support measures for consumers experiencing temporary vulnerability should have the following features:

- They should be capable of fast implementation.
- Eligibility should be related to the circumstances in which they have been introduced.
- Conditions that led to their introduction need to be closely monitored.
- They should be designed for easy and fast withdrawal once temporary vulnerability has passed.

If measures that are meant to deal with temporary vulnerability become permanent, they can become costly and undermine the targeted nature of effective long-term vulnerable consumer strategies.

7. Vulnerable Consumers Options Analysis

Table 2 - Advantages and Disadvantages of Vulnerable Consumer Options

Type	Example	Who implements	Advantages	Disadvantages
Pricing policy	Social tariff	Government, regulator, energy company	Pricing specific to vulnerable consumer	Needs subsidy or cross subsidy. Difficult to implement in competitive markets
Direct financial support	Rebate, voucher, concession, low-income support measures	Government	Operates with cost reflective pricing, targeted, can work in competitive market	Difficult to decide eligibility. Budget cost. Suppresses price signal
Regulatory measures	Disconnection bans, hardship support for vulnerable consumers	Government, regulator, energy company	Non-price intervention, targeted	Eligibility, regulatory costs, open to "gaming"[21]
Energy efficiency	Investments in social housing, insulation	Government, energy companies, energy service companies	One off intervention, high payback, targeted	Rebound effect[22], budget cost
Information	Energy efficiency advice, energy literacy campaigns	Government, energy companies, non-Government organisations (NGO's)	Targeted, low-cost delivery options, potential long-term benefits	Rebound effect, uncertain outcomes
Technology	Digital meters, demand response, self-generation	Government, energy companies	Targeted, speed of response	Budget cost, self-rationing, requires digital literacy
Choice of supplier	Digital comparison tool of offers from retail suppliers – focus on vulnerable consumers	Government, regulators	Encourages innovation in pricing and tariffs, empowers consumers	Significant implementation costs, consumer awareness and education costs

[21] "Gaming" a regulation means to exploit the regulation to avoid meeting commitments like paying an energy bill.

[22] The "rebound effect" in economics means a reduction in the expected gains from efficiency owing to a behavioural change. In this case it would mean increased savings from energy efficiency lead to the consumer increasing their consumption in response.

MARSDEN JACOB ASSOCIATES

Contact us

Cameron O'Reilly

Associate Director

coreilly@marsdenjacob.com.au

+61 413795585

Marsden Jacob Associates Pty Ltd

03 8808 7400

Marsden Jacob Associates

economists@marsdenjacob.com.au

www.marsdenjacob.com.au