

A high-angle, close-up photograph of a vast array of solar panels. The panels are dark blue with a grid of thin white lines. They are arranged in long, parallel rows that recede into the distance. The surface of the panels is highly reflective, mirroring the bright blue sky and the large, white, fluffy clouds above. The perspective creates a strong sense of depth and repetition.

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Glossary of Terms

Prosumer

A combination of "producer" and "consumer." In this context, it refers to households or individuals who both generate energy (typically through rooftop solar) and consume it.

Renewable Energy

Energy derived from natural sources that are replenished constantly, such as sunlight, wind, and hydro. In this article, the focus is primarily on solar photovoltaic (PV) energy.

Photovoltaic (PV)

A method of generating electrical power by converting solar radiation into electricity using semiconductors that exhibit the photovoltaic effect, commonly seen in rooftop solar panels.

Battery Storage

Technology that stores generated electricity for later use. It enables households to store solar energy generated during the day and use it at night or during peak demand periods.

Smart Meter

A digital device that records electricity consumption in real-time and communicates the information to the energy supplier for monitoring and billing. It is essential for managing and verifying energy transactions.

Virtual Power Plant (VPP)

A network of decentralized power generating units (like home solar systems and batteries) managed by software to function as a single power plant. It optimizes generation, storage, and consumption.

Kraken Technologies

A platform developed by Octopus Energy that manages distributed energy resources, including home solar, batteries, and grid-scale systems. It is used to balance loads and lower costs in the United Kingdom.

Block-chain

A transparent, secure, and decentralised digital ledger used to record transactions. In the energy context, it ensures accountability and traceability of energy trades between Prosumers and other parties.

Inflation

The rate at which the general level of prices for goods and services rises, eroding purchasing power. Energy pricing is a key driver of inflation, making its control a central economic objective.

Disposable Income

The amount of money households have left after taxes and essential expenses. Increasing disposable income is a key goal of the policy by lowering household energy costs.

Superannuation (Super)

A compulsory savings program in Australia designed to provide income in retirement. This policy proposes using a portion of super funds to invest in personal or shared renewable energy systems.

Fuel Excise

A government tax on petrol and diesel fuels. As electric vehicle (EV) usage grows, this traditional revenue stream is expected to decline.

Energy Market Operator (AEMO)

The Australian Energy Market Operator is responsible for operating and managing energy markets and systems. The article argues AEMO currently favors large energy providers over smaller producers like households.

Peak and Off-Peak Pricing

A pricing structure where electricity costs vary depending on the time of day. The article contends this model is outdated and not reflective of modern energy production and use patterns.

Vehicle-to-Grid (V2G) / Vehicle-to-Home (V2H)

Technologies that allow electric vehicles to feed stored energy back into the grid or a home, essentially acting as mobile batteries.

Connection Fee

A fixed cost charged to remain connected to the electricity grid, even if the household generates most of its own power.

Public Good

A resource or service provided without profit for the benefit or well-being of the public, such as healthcare, education, or—in this proposal—energy.

Time-of-Use (TOU) Pricing

A pricing model where electricity costs more during high-demand periods. The article proposes more dynamic and equitable models made possible by modern energy systems.

Energy Equity

The principle that all individuals, regardless of income or location, should have fair access to affordable and sustainable energy.

Government-Owned Energy Authority

A proposed entity that would buy, store, and redistribute renewable energy to ensure fair pricing, stability, and equitable access across the nation.

About the Authors

Both [REDACTED] and [REDACTED] are engaged in professional engineering activities. They have a combined 18 years experience with domestic PV energy systems and have graduated the combined; University of Newcastle, unitar and cifa Empowering Climate Champions 2025 course. This discussion paper represents their advocacy and commitment to a better future through the intelligent use of technology.

Executive Summary

This discussion paper outlines a transformative national energy policy designed to deliver universal and equitable access to renewable energy for all Australians. The proposal addresses four core government priorities: boosting productivity, increasing household disposable income, managing and reducing inflation, and ensuring no one is left behind. Crucially, it achieves these goals without placing additional strain on the national budget.

At the heart of the scheme is a restructured, government-backed energy marketplace that empowers Australian households to become "Prosumers"—producers and consumers of energy—through rooftop solar and battery storage. This energy can be stored, traded, or sold to a government-owned third-party authority using existing technologies such as block-chain, smart meters, and virtual power plant (VPP) management software. The system creates a transparent, traceable, and efficient energy economy that reduces reliance on traditional energy providers and market manipulation.

The government will act as both a regulator and redistributor of energy, allocating surplus kilowatts (not dollars) as non-inflationary assistance to low-income households and targeted industries. This direct energy transfer mechanism ensures affordability, enhances energy independence, and provides a tool for controlling inflation by stabilising energy prices.

Funding for the policy leverages existing solar rebates, ongoing infrastructure upgrades, and a novel use of superannuation funds, enabling Australians to invest in renewable systems at their homes or collectively in large-scale solar farms. This makes clean energy access possible even for renters or those without suitable rooftops.

The implementation of this policy represents the single greatest productivity and cost-of-living improvement opportunity currently available to Australian society. It mirrors past landmark reforms such as Medicare and the PBS in its scope and social impact. With minimal additional government outlay and maximum public benefit, this initiative redefines energy as a public good and positions Australia as a global leader in equitable, sustainable energy policy, whilst hedging the national economy against global inflationary shocks caused by energy uncertainty.

Forward:

The scheme being proposed in this discussion paper has been developed to fulfil the governments stated goals of:

- Boosting productivity.
- Increasing the disposable income of households.
- Reducing & managing Inflation.
- Ensuring that Nobody is left behind.
- No increased deficit to the budget.
- Increased investment opportunities.

This document outlines how all of these targets can be achieved without negatively impacting the national budget. It will in also create a new positive revenue stream to support the government and provide a mechanism to directly control inflation.

The revenue stream created can be used as targeted assistance to industry and low income households. The assistance will be noninflationary and will not be accessible to the manipulation and price gouging of the commercial power industry sector.

The financing, technology and infrastructure required to cost effectively deliver these outcomes exist today and are accessible to, or are already in government hands.

This scheme represents the Universal and Equitable Access to Renewable Energy for all Australians. It treats energy as a tradable commodity accessible to all. As such it is only a policy that could be implemented by a Progressive Labor Government with bold social reform agenda and the welfare of the Australian people at heart. It will be as fundamental to Australian society as the Pharmaceutical Benefits Scheme (PBS), Medicare, Free Education (from the Whitlam era) and the National Disabilities Insurance Scheme (NDIS).

The implementation of this policy will fast track and complement the uptake of domestic renewable energy in a way that is accessible and equitable to all citizens as well as benefiting businesses with the flow on effect of reduced wages demand and lower energy prices.

Some 4 million Australian households have embraced the uptake of renewable energy in the form of roof top solar. As the benefits of this technology were eroded by the large energy providers manipulating the system, we have seen the amazing popularity of the government supported uptake of domestic batteries. Whilst this initiate is to be applauded it does come with serious consequences that will need to be addressed.

To view this proposed initiative in business term, this policy represents the single largest productivity and efficiency gain that could possibly be delivered to Australian society today. It directly impacts household energy budgets with no middle man intervention. For a suitably positioned household it generates and stores power at the same point of use without the need for costly transmission and storage. It has hedged the household and nation as a whole against global inflationary external energy shocks.

From a strategic perspective it creates an energy network that is almost impossible to knock out.

This proposal transforms and accelerate participation in the Australian domestic renewable energy revolution from *“I’m alright Jack”*, to the next level of *“and I’m helping my mates”*.

Historical Facts

Australia is often referred to as “The Lucky Country with Mediocre Management”. After 28 Years of uninterrupted growth, by any measure of the Pareto 80-20 rule, one would expect that in a mature business economy the most significant productivity gains have already been achieved. Should a business be able to find a meaningful productivity gain then the question of “what is management doing?” is noteworthy. Continuing to look in the same places to achieve economic growth and prosperity will yield very little further gains, cost way too much to our industry and society as a whole.

After an extended period of economic growth the benefits of this prosperity is not evident or proportionally represented in wages growth or household disposable income, the “*trickle down effect*” from this period of national prosperity is insignificant.

For the purpose of this discussion we will consider that economic growth and prosperity can be achieved by considering households in the context of a business. As such the reduction in operating costs through solar and battery investment will provide a “*flow on effect*” of reduced wages demand and increased disposable income.

Australia has largely abandoned on shore oil refining with only 2 sites remaining active. Although this current situation poses a fuel security risk it is convenient as the country transitions away from fossil fuelled (ICE) vehicles to electric vehicles (EV's). There will be very little negative impact domestically from an industry sector that has largely gone off shore and is in decline.

For the first time ever people will be able to charge their vehicle at home with energy that they generated themselves. This is a considerable saving and convenience to a household. To look at this in business terms this is a significant productivity gain to the individual household and has a positive impact on the national balance of trade figures. However there is a loss of revenue to the government by way of reduced fuel excise income.

In 2009 the Australia Energy Market Operator (AEMO) was established. It was formed to manage the trade in energy between producers and consumers. However in reality it has served as the principal tool to ensure a stable predictable market was available for the privatisation of public generating assets. The largest generating group in the country is private roof top solar and this group has no representation within this system.

As state owned generating assets were privatised the operators have done little to keep pace with the energy market by reinvesting in new low cost sustainable generating assets but rather they have opted to “sweat” the life of the initial purchase and game the energy system using large scale but limited battery storage systems. These batteries are charged using cheap roof top solar taken during the day and selling it back to consumers at a premium during peak demand.

With the rise and now dominance of domestic rooftop solar photovoltaic (PV) generating systems a new and dominate class of entity has entered the market, the “Prosumer” (Producer-Consumer) The current regulations were not designed to deal

with this type of energy producer the regulatory framework is outdated and no longer fit for purpose. Peak and off peak power models are no longer relevant in this day and age and the current system is not being operated in a way that would benefit consumers with lower prices and reduce inflation. For example: Turning on hot water systems in the middle of the day to absorb excess solar energy.

Energy pricing has an immediate and direct effect on inflation. By owning and controlling the storage and distribution of energy the government will have a mechanism that can be used to directly control and influence the cost of living, without the intervention and market manipulation that currently exists.

Technology Holds the Keys to a Sustainable Future

The technology and systems required to implement this policy exist today. It is only a matter of connecting the individual elements with an overarching management structure.

Solar Panels & Battery: The technology is well supported by Australian households and yielding very good outcomes across the nation. They are affordable and efficient; a household invested in PV and battery storage has a hedge against inflation and energy shocks. On a national scale this hedge will give our country a global trading advantage.

Smart Meters: These are a necessary evil that was made a requirement to own and operate a roof top solar installation; however they do provide accessible real time data to make the whole system work and are in place now or are available for installation.

Poles & Wires: Are being upgraded across the country to facilitate the movement of power across the nation. Although the issue of domestic power demand will largely be solved on site with appropriately sized solar and battery systems it is necessary to generate and move some power to support industry, cities and infrastructure energy demands.

Energy Storage: Snowy Hydro 2.0, large scale batteries, domestic batteries and electric vehicle equipped with V2H & V2G technology will easily cover the nation's energy storage requirements. Linking all these storage systems into a virtual power plant (VPP) will be important to create a scalable robust storage system with the capacity to meet the nation's requirements.

Management Software: The software required to link, monitor and control the various generating and storage systems into a VPP exist today and is in use in the United Kingdom. Kraken Technologies, part of the Octopus Energy Group has successfully delivered a VPP. The flexible energy resource management tool can buy and sell power to the grid, optimizing energy consumption and costs for users. The platform also manages grid-scale batteries and renewable energy generation. This is contributing to grid stability and lower energy costs.

Block Chain: Is a system in which a record of transactions is maintained across computers that are linked in a peer-to-peer network, it is completely transparent and traceable. This technology is fundamental and the key to this entire system.

How the System will Work:

A Prosumer after meeting their own energy requirements sells their surplus energy to a third party, not necessarily the organisation that sells them power. It is proposed that the third party is a government owned energy authority. The data for the transaction is generated by the smart meter and recorded using block-chain.

The government manages the movement and allocation of this energy using the Kraken management software. The surplus energy may be allocated by the government at a reasonable mark-up to low income households, or as directed support for focused industry sectors. These government assistance transactions are in kilowatts not as a dollar subsidy. They will directly impact the recipients cost of energy and will be possible for this assistance to be time and targeted to maximise the impact of the benefit to the consumer created by time of use variable pricing.

Should the Prosumer wish to reacquire some energy, for example to charge an EV at a remote site. Then this transaction could be facilitated in kilowatts plus a storage and transfer fee.

Should the Prosumer wish to subsidise other family members energy usage then this transaction could also be conducted in kilowatts plus a storage and transfer fee.

Should the Prosumer be a small business owner then it would be possible for them to augment the business energy bill with kilowatts generated from their home and vice versa using this system.

The government generates revenue by facilitating and managing the storage and transfer of energy across the nation. It will have access to trading any surplus energy on the market to manage pricing and inflationary pressures.

When a Prosumer has generated sufficient government stored energy reserve to deal with a domestic system failure then they can opt to “cash out” some of reserve. This income is now visible and should be taxed as income at a suitable rate to allow for a portion of the original generating asset depreciation.

Universal Access to Renewable Energy:

The government as the third party purchaser and wholesale distributor of renewable energy will provide a safety net for the Prosumer and consumer alike. They will be able to set baseline costing and distribution of power and thus control the pricing impacts on households and business.

Under this scheme we will ensure that “Nobody is Left Behind”, even those who do not own a home, have not got a suitable solar aspect, are renting or lack the initial deposit will be able to own a renewable energy generating asset.

Funding the Rapid Transition to a Renewable Future:

The funding for this proposal exists today and does not rely on the government to provide any further support than that which is currently being provided today (Solar and battery rebates)

This system does not require any further hardware Infrastructure investment requirements beyond those currently underway.

The existing cohort of over 4 million households appreciate the benefits associated with PV power generation. With the additional incentive provided by the government to invest further in a renewable future by way of a domestic battery storage system the reality of owning their own renewable energy system on site and the corresponding reduction of their energy bill to little more than a connection fee will become apparent very soon.

The effect of this transition on the network operators is yet to be seen as these households will not be buying power from the grid and will be selling less back into the grid. This will significantly reduce the profits of those gaming the system with time of use charges and large scale batteries storage systems.

It is suggested that all New Entrants into the housing market meet a federally mandated minimum solar and energy storage requirement, based on the number of rooms in a dwelling. All new property development layouts must optimise the solar aspect for each proposed site ensuring equitable solar access for all.

Using Superannuation Investment:

There are many individuals in Australia that have over \$12,000 in superannuation savings, yet they lack immediate access to sufficient funds to purchase a solar system and battery storage. In order to fast track the transition to renewable energy future it is proposed that a portion of an individual's superannuation savings (\$12,000 maximum) may be invested into a renewable energy system in one of two ways dependant on the members housing situation:

The first investment method is for the superannuation fund to provide some of the member's capital as a loan to be invested in their own PV and storage system. The fund will negotiate and engage a solar system and battery provided to install a complete and appropriately sized system on the members owned house. This investment is paid back into the members account at a predetermined rate until the loan and suitable commercial rate of interest is returned to the member's account. Excess energy generated and sold to the grid is used to contribute to paying down the member's debt.

By the fund negotiating purchase agreements and commissioning a solar service provider, efficiencies and bulk purchasing benefits will be available to the fund members. Removing the potential for rip-offs and "sharp practice", that is rampant within the renewable energy industry and providing the member's with the confidence and peace of mind to commit to the investment.

The second investment method is proposed for those members that do not own a property, are renting or do not have suitable solar access. In these circumstances it is proposed that the super fund in partnership with the state or federal government build a solar farm and large scale battery storage system on crown land. Each member is invested in the generating and storage capacity of the facility and manages the transfer of power through the government controlled distribution network and block-chain accounting system.

This investment is paid back into the member's account at a predetermined rate until the loan and suitable commercial rate of interest is returned to the members account. Excess energy generated is sold to the grid and is used to contribute to paying down the debt.

With superannuation funds engaged in the development and operation of solar farms a new ethical investor will be introduced to the market. This will also provide the opportunity for super funds to expand the investment beyond that of providing member's with access to domestic renewable energy, but also develop a commercial branch to the portfolio where excess power is sold to industry.

Conclusion:

The proposed scheme represents a transformative opportunity for Australia to redefine its energy economy by prioritising universal, equitable access to renewable energy. By leveraging existing technologies, infrastructure, and financial mechanisms—most notably the untapped potential of household solar, battery storage, and superannuation investment—this policy offers a pragmatic yet visionary path toward increased productivity, reduced inflationary pressure, and enhanced household disposable income.

More than a technical solution, this proposal is a bold act of nation-building. It shifts energy from a profit-driven commodity to a public good, underpinned by block-chain transparency, smart-grid efficiency, and government oversight that places the interests of all Australians—especially those traditionally left behind—at the centre. Through the integration of Prosumers into the national energy market, the scheme empowers citizens as both producers and beneficiaries, while positioning the government as a stabilising force against market manipulation and energy price shocks.

Just as Medicare, the PBS, and free education once redefined what it meant to live in a fair and progressive society, this policy offers the same potential for the energy sector. It provides a practical framework to decarbonise the economy, lower the cost of living, and deliver tangible benefits to households and industry alike—all without burdening the national budget.

In an era where climate resilience, economic equity, and energy independence are non-negotiable, this initiative delivers on all fronts. It is not only possible—it is essential. The time for bold, inclusive energy reform is now.