# The Energy Network © Unlocking energy abundance

#### Fuse Crypto Limited (the "Issuer")

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#### Regulatory notice

A copy of this document has been delivered to the registrar of companies at the Jersey Financial Services Commission (the "JFSC"). However, no regulatory authority has approved, whether formally or informally, of any of the information set out in this document. No such approval has been or will be sought under the laws, regulatory requirements or rules of any jurisdiction. This document has not been approved by any competent authority including, but not limited to, in any Member State of the European Union, in the United States of America, in the United Kingdom and in Jersey.

#### General

The JFSC has issued a consent to the Issuer under Article 2 of the Control of Borrowing (Jersey) Order 1958, further to an application made by the Issuer for the issue of the tokens referred to in this document (the "**Tokens**"). However, It must be distinctly understood that, in giving this consent, neither the registrar of companies nor the JFSC takes any responsibility for the financial soundness of the Issuer or for the correctness of any statements made, or opinions expressed, with regard to the Issuer.

The issuance of the Tokens by the Issuer is not regulated by the JFSC under Jersey's prudential regulatory laws (including but not limited to the Financial Services (Jersey) Law 1998). The JFSC is protected by the Control of Borrowing (Jersey) Law 1947, as amended, against liability arising from the discharge of its functions under that law.

The directors of the Issuer have taken all reasonable care to ensure that the facts stated in this document are true and accurate in all material respects, and that there are no other facts the omission of which would make misleading any statement in this document, whether of facts or opinion. All the directors accept responsibility accordingly.

The Issuer has not authorised anyone to disclose any information or confirmations more than the information disclosed in this document and on the Issuer's website. If such information and confirmations are nevertheless given, prospective Token holders should not rely on them as if they had been authorised by the Issuer.

# Requirements under the guidance issued by the JFSC in respect of token issuances (the "JFSC Guidance")

The Issuer is a private limited company incorporated in Jersey. Anyone issuing a token through a Jersey company will require a specific consent from the Jersey Company Registry, part of the JFSC. Whilst this consent does not give the Issuer a 'regulated' status, it mandates a set of conditions designed to ensure that the Issuer meets specific standards in terms of governance, investor disclosure and AML/CFT/CPF compliance.

Token sales or coin offerings are typically a highly speculative form of investment. Investors should be prepared for the possibility of losing their investment completely. Investment in token sales or coin offerings is not necessarily subject to existing capital market regulations and protections.

In particular, Investors should be aware that they will be asked to acknowledge the above warning and also confirm the following prior to them receiving Tokens:

- (for an individual) that they have read the above warning and understand the risks set out above; the Tokens are suitable for them and that they wish to proceed to acquire Tokens from the Issuer.
- (for an entity) that they are duly authorised to act on behalf of that entity, they have read the above warning and understand the risks set out above; that the entity they represent has considered the features of the Tokens carefully and considers it suitable and wishes to proceed to acquire the Tokens from the Issuer.

#### Important note for authorised participants

In this section, references to "Authorised Participants" refers to companies which are part of the Fuse group or market makers appointed by Fuse who acquire the Tokens and participate in the Fuse ecosystem.

Where an Authorised Participant acquires the Tokens and then facilitates their transfer to a third party (including a Fuse user) ("prospective Token holders"), the JFSC expects Authorised Participants to provide (and draw a prospective Token holder's attention to) the warnings set out in this section, as well as drawing such prospective Token holder's attention to the Fuse website (www.fuseenergy.com) and the information contained on this website (including this document) prior to Tokens being acquired.

By acquiring Tokens an Authorised Participant is deemed to undertake to the Issuer that it will draw the prospective Token holder's attention to the warnings set out in this section prior to facilitating the transfer of the Tokens.

The Issuer will only appoint Authorised Participants that are companies subject to the appropriate regulation in one or more of (i) a member state of the European Union, (ii) Jersey, (iii) the United Kingdom, and (iv) any other jurisdiction that is not a country or territory identified as presenting higher risks in the AML/CFT Handbook for regulated financial services business published by the Jersey Financial Services Commission from time to time, experienced in dealing with non-security utility tokens.

# Important note for those acquiring tokens on the secondary market

Each Token holder who acquires Tokens on the secondary market will be deemed, by such acquisition, to have represented that:

- they have read the information contained on the Fuse website referred to above (including this document);
- they have received and acknowledged the warning set out above under the JFSC Guidance (as defined above); they understand the risks set out above: that the Tokens are

- suitable for them and that they wish to acquire Tokens from the Issuer; and
- they understand that they will not be able to burn
   Tokens in exchange for a discount on Fuse products and
   services until they have been onboarded by a Fuse group
   entity and have satisfactorily completed all necessary
   onboarding checks and approval including those relating
   to client due diligence checks and approvals as required
   under relevant AML/CFT/CPF laws, regulations and
   licence conditions (as applicable).

#### Notice to all U.S. persons

The Tokens are not intended to be available for use, purchase, or access by U.S. persons, including U.S. residents, or persons in the United States of America, or companies incorporated, located, or resident in the United States of America, or who have a registered agent in the United States of America. The Tokens are not available to such U.S. persons and should not be resold to such persons.

#### Forward looking statements

All statements contained herein may constitute forward-looking statements (including statements regarding intent, belief or current expectations with respect to market conditions, business strategy and plans, financial condition, specific provisions and risk management practices). You are cautioned not to place undue reliance on these forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors that may cause the actual future results to be materially different from that described by such forward-looking statements, and no independent third party has reviewed the reasonableness of any such statements or assumptions. These forward-looking statements are applicable only as of the date set forth in this document.

#### Not an offer

This document does not constitute an offer to the public of crypto-assets. This white paper contains general information with respect to the Tokens and the Network.

#### **Conflicts of interest**

The Issuer, Fuse, its affiliates, their respective directors, partners, members, officers, employees and agents may be subject to certain conflicts of interest with respect to the Tokens and the activities described in this document. In particular, Alan Chang and Charles Orr are directors of the Issuer, which is controlled by its sole member Fuse Laboratories Limited. Alan Chang and Charles Orr are also shareholders and directors of Fuse Laboratories Limited and Alan Chang is the ultimate beneficial owner of Fuse Laboratories Limited.

Suntera Trust & Corporate (Jersey) Limited ("Suntera") is the Jersey corporate services provider and company secretary of the Issuer and Fuse Laboratories Limited. Some directors of the Issuer and Fuse Laboratories Limited are also employees of Suntera.

You should carefully read, understand and independently consider the contents of this document and the potential conflicts of interest that do or may exist. Such conflicts of interest, today and as they evolve, may affect the value of the Tokens now and in the future.

#### **Taxation**

The following information is provided for general informational purposes only and should not be construed as tax advice. Tax laws and regulations vary widely between jurisdictions, and the tax treatment of virtual assets like the Tokens may be subject to change. It is the responsibility of each individual participant in the Token ecosystem to comply with their applicable tax obligations and seek professional advice as needed.

Participating in the Token network may have tax implications on the participants. Virtual asset transactions may be subject to taxation in your jurisdiction, including but not limited to capital gains tax, income tax, and value-added tax (VAT). The tax treatment of virtual asset transactions depends on various factors, including the specific nature of the transaction, the laws of your jurisdiction, and your personal circumstances.

It is important to keep accurate records of all virtual asset transactions, including purchases, sales, exchanges, and any other relevant activities. Failure to comply with tax laws and regulations may result in penalties, fines, or other legal consequences.

Nothing in this document should be interpreted as tax advice. Participants are encouraged to consult with a qualified tax professional or advisor to understand their tax obligations and ensure compliance with applicable laws and regulations.

#### **Advisers**

The Issuer has or will engage with the following advisors in connection with its operations: Walkers LLP (Jersey legal matters), Freshfields Bruckhaus Deringer LLP (UK legal matters), Latham & Watkins LLP (US legal matters), Suntera and Johnsons Financial Management Limited (financial audit services).

#### **Abstract**

Our grids are holding us back. We are placing unprecedented demand on them to support new waves of energy-intensive automation, AI, and transport. The physical infrastructure is lagging behind. The process of connecting any large site to the grid – be it a generation plant, data centre, or manufacturing facility – is overwhelmed by red tape and delays that can now stretch out beyond a decade. The root cause is limited grid capacity and network congestion. Our failure to increase grid capacity is having downstream impacts on growth, energy prices, volatility, and system stability. Grids today are on the brink: energy crises abound, price hikes are hitting households, and major blackouts regularly draw headlines. In short, our grids are failing to scale.

In this whitepaper, we present a solution for scaling the grid. The Energy Network coordinates the use of distributed energy resources (DERs): homes and smart devices that can shift energy consumption on demand, functioning as flexible nodes within our grid systems. The Energy Network leverages these flexible nodes to relieve congestion and arbitrage energy markets. The result is more stable and secure grid systems, and lower energy prices.

Fuse is the participation layer, interfacing between the Energy Network and regulated energy markets and grid The Energy Network Abstract

operators. Fuse handles market entry, risk management, settlement, and dispatch notifications to network participants. The project's native utility token, the Energy Dollar, serves as the underlying incentive mechanism, distributed on the basis of real value contributed to the Network.

To maximise accessibility, the Energy Network is device-agnostic: no proprietary hardware is required to participate. Gigawatts of DERs already exist in homes in the form of batteries, solar, and EV chargers which, if unlocked, will save billions in grid costs. What is missing is a platform to incentivise and leverage the use of this latent capacity. This is the gap The Energy Network fills.

For the user, the interaction is simple: connect your devices (if you have any), receive signals to shift energy to specific times of day, earn rewards, then burn them for discounts on real goods and services.

The structure of this paper is as follows: Section 1 sets context, grounding the importance of scaling global energy consumption, the immediate threats standing in our way, and the potential of distributed energy technology as a solution; Section 2 dives into energy markets, their inefficiencies, and opportunities to capture value; Section 3 introduces the Energy Network, the principles upon which it is designed and operated, and the tokenomics of the Energy Dollar; Section 4 discusses the implementation details of Network registration, market participation, token development, and governance; Section 5 discusses trends across the energy market and future implementations; Section 6 discusses risk factors.

The Energy Network is engineered to scale our grids and to relieve congestion. Energy abundance awaits on the other side.

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## **Mission**

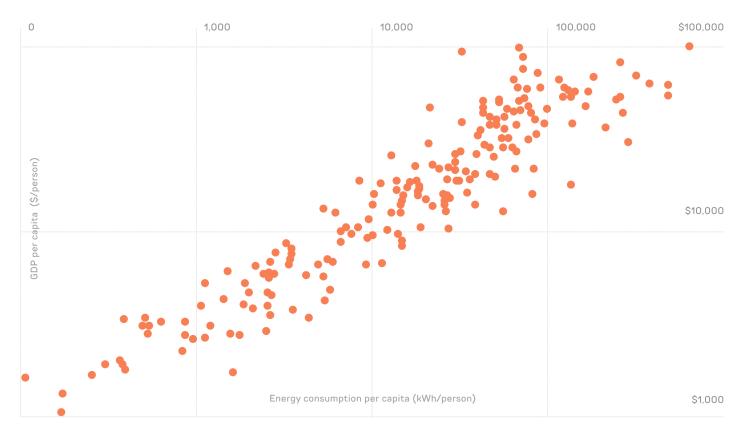
#### 1.1

# Side effects of progress

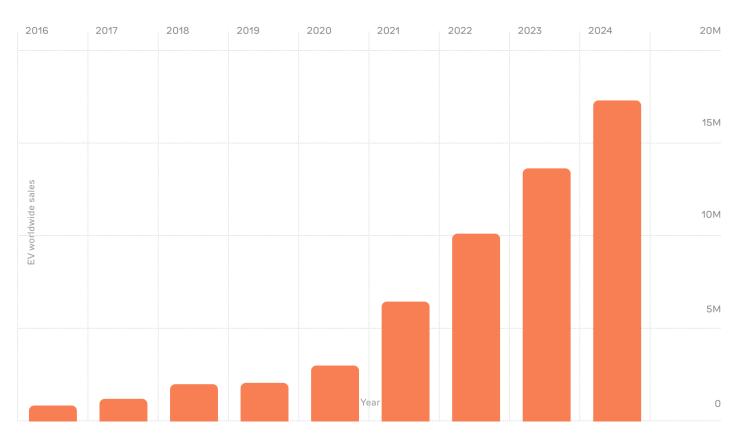
Our society has made more progress over the past two centuries than ever before. As we have developed as a civilisation, our electricity consumption has increased exponentially. Greater use of electricity consistently brings about more economic growth and improved human wellbeing. Continuing this trend will either propel us forward or hold us back in the coming decades.

As we progress through the 21st century, we are experiencing two technological shifts that have seismic implications for our electricity demand: the electrification of transport, and the proliferation of AI.

In 2024, 20% of all new cars sold were electric, more than doubling from three years previous.¹ With each new electric vehicle deployed, we add the equivalent of a small household's worth of demand to the grid.² The global surge in Al will result in data centres consuming up to 3–4% of global electricity by the end of 2030, nearly tripling their share from today.³ As hardware efficiency improves, the key cost driving the Al revolution will be the energy needed to power it.



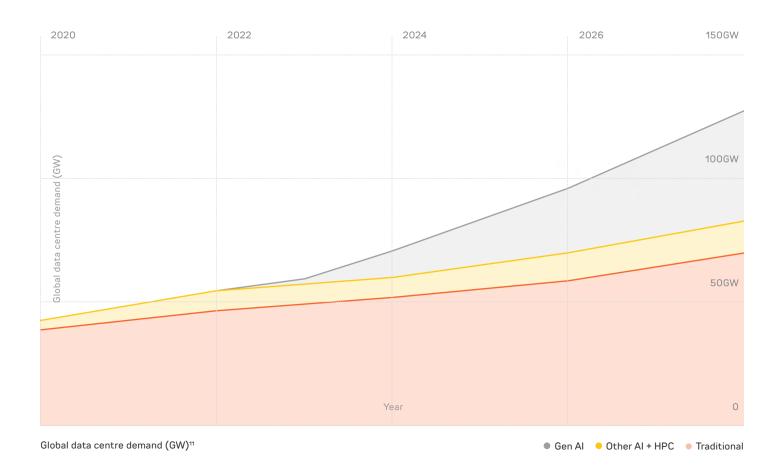
Energy consumption vs GDP per capita<sup>4</sup>

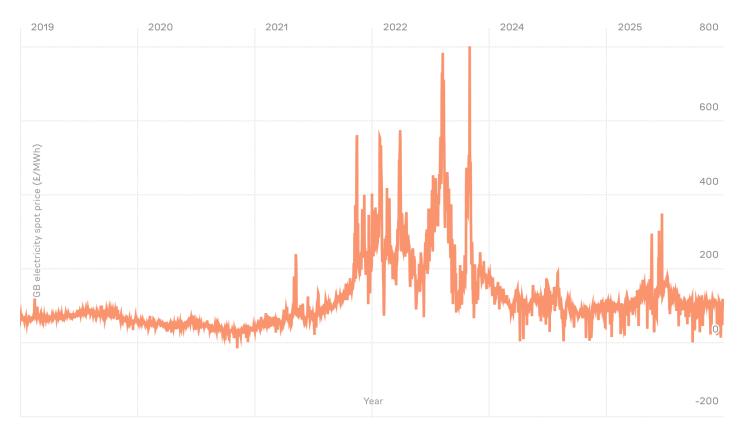


EV worldwide sales (millions)<sup>5</sup>

While these changes present huge opportunities to increase productivity and global wellbeing, their load on our energy systems has the potential to significantly harm us. In 2024 alone, global electricity demand surged by 4.3%, more than twice the average increase seen over the last ten years. In the past, we built large power plants and long power lines with limited capacity to satisfy our needs. However, as we apply the demands of the 21st century to this architecture, our grids are buckling under the pressure. We are seeing increases in energy price volatility, blackouts, power disruptions, and our susceptibility to extreme weather events.

Many developed economies have become accustomed to a certain rate of progress. Infant mortality is decreasing<sup>9</sup>, education levels are rising<sup>10</sup>, and technology is making us more efficient. But supporting the trends in our demand for energy is a key requirement for continued and accelerated development. Without a solution, we risk stagnation.





Volatility in GB electricity spot price (£/MWh)12

#### 1.2

# Our grid problem

Historically, we powered our economies with a relatively small number of large-scale, centralised power plants, generating steady power 24/7. Centralisation made sense here, due to the scaling laws attributable to thermal engines like coal-fired power plants, which become more efficient with size.<sup>13</sup> However, those scaling laws do not apply to many new technologies. Solar is based on sunlight creating a voltage across a semiconductor. This principle is equally efficient for one panel or one thousand, so centralisation makes less sense. Decentralisation of these sites allows us to optimise over external factors, like solar irradiance and land availability.

A key benefit of such new energy sources, like wind and solar, is that they have decreased in cost exponentially over the past two decades, and are often now far cheaper than their fossil fuel alternatives.<sup>14</sup> They have a near-zero marginal cost of production<sup>15</sup>, meaning they now represent a viable

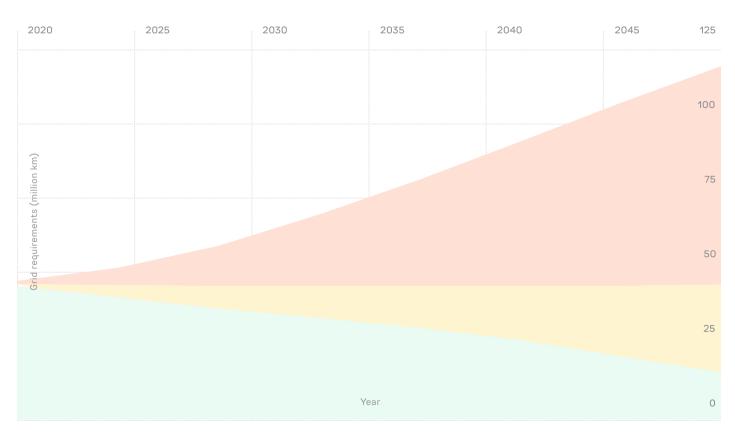


solution to unlocking cheap, abundant energy for us all. However, their deployment is currently impeded, not by lack of investment, but by outdated grid infrastructure.

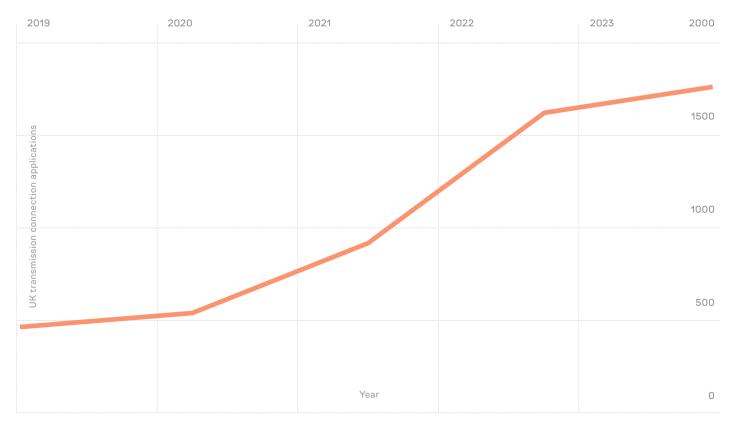
Current grids connect centralised generators and demand centres over long power lines. But the optimum model to support newer technologies looks completely different to the one we have today. The bottom line is that without a fundamental change in how we design and operate our grids, a gargantuan amount of infrastructure is required to support these technologies at large, utility-scale sites. In order to support the transition to newer, cheaper technologies under current design paradigms, the International Energy Agency estimates we will need more than 80 million kilometres of additional power lines globally, while simultaneously rebuilding our existing infrastructure. This is exhibited in the charts on the following page.

2020	2025	2030	2035	2040	2045	2050	125	
							100	
(c								
Grid requirements (million km)							75	
ments (r								
require							50	
Grio								
							25	
			Year				0	
Advanced economies grid requirements <sup>17</sup> • Additional • Needs replacing • Existing								





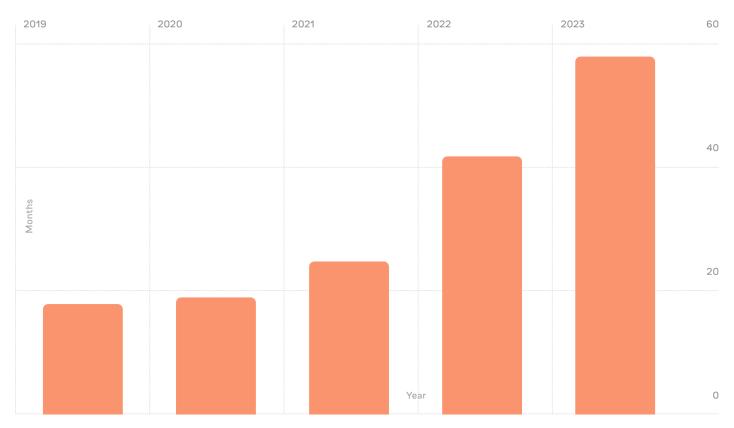
Emerging economies grid requirements<sup>18</sup>



UK transmission connection appplications<sup>19</sup>

This presents a severe problem. The entire world is trying to deploy decentralised generation into a centralised architecture. This mismatch has ground development to a halt. Now, when a new generation site is ready to be built, it is added into a long queue based on its burden on an archaic, centralised power transmission system. The result is agonisingly long grid-connection delays across the globe. Hamstrung by red tape and public planning regulations, new grid infrastructure often takes 15 years to plan, permit, and complete.<sup>20</sup>

According to the UK National Grid Electricity System Operator, despite record high application numbers, driven by rising energy demand, there is little-to-no correlation between applications received and connections energised.<sup>21</sup> Costs associated with grid reliability are surging, with network charges now making up 23% of the UK household energy bill.<sup>22</sup> These symptoms are reflected across many western economies. On our current trajectory, the major blackouts in Spain, Portugal, and Chile observed in 2025 are just the beginning. We do not have time to waste.



Average Delay (Connection Date Requested vs Offered)<sup>23</sup>

#### 1.3

# The potential of Distributed Energy Resources (DERs)

Distributed Energy Resources (DERs) are any small-scale electricity generation, storage, or load assets, generally located close to the point of consumption. Rooftop solar panels, batteries, smart thermostats, and electric vehicle (EV) chargers are all examples of DERs. Their benefit is not only that they avoid the grid-related connection issues highlighted in the previous section, but also present an opportunity to remediate them.

Currently our energy demand is highly inelastic to price and grid signals: we consume roughly the same amount regardless of the cost. This results in inefficient markets and unstable grid operation. DERs however, provide a solution. Typically possessing some form of control mechanism, they can automatically adjust when they consume, store, or export electricity, responding to these signals to help balance supply and demand.

Instead of ramping power plants up or down, DERs can be used to control consumption on the demand side, providing demand-side flexibility. From the perspective of the grid operator, ramping demand down is equivalent to ramping supply up, and vice versa. A collection of DERs used to ramp demand up or down can be viewed as a 'virtual' generator doing the opposite action. This lends the name virtual power plant (VPP) used for aggregations of DERs. If employed correctly, they reduce the need for grid operators to procure grid reliability and balancing services, which are increasingly strained and expensive globally.<sup>24</sup>

The benefit of decentralisation comes from the fact that locating DERs near the point of consumption reduces the need to transmit power over long distances during demand peaks. This reduces grid congestion (and its associated charges), reducing energy prices and avoiding the issues of connection delays plaguing larger scale sites. Ultimately, they enable more local and stable use of energy, reducing energy prices, improving connection wait times, and increasing our energy security.

Another key benefit of DERs is that many already exist in homes. They are not constrained by the slow grid connection timelines or large upfront capital expenditures impeding larger resources. They can begin supporting the grid now, not in five years. However, they remain underutilised. In Australia, a more mature market, DERs provide less than 10% of the country's energy.<sup>25</sup> In the U.S., where that figure is currently less than 5%, DERs are expected to grow by 216 GW through 2028.<sup>26</sup> For reference, 1 GW equates to the average power use of 876,000 homes.<sup>27</sup> This available but unused capacity presents a massive opportunity to the project that can unlock it.

#### 1.3.1

# Challenges facing DERs

DERs are increasing in adoption,<sup>28</sup> but they face a number of challenges. Installation experiences are poor and inconsistent, they are significantly more expensive than they need to be, and they lack a coherent coordination mechanism.<sup>29</sup> The root cause is a lack of standardised access for consumers, and a lack of tools for DER installers to manage their operations. High customer acquisition costs and low installer utilisation drive prices up unnecessarily.

People who install DERs are not fully benefiting from them today because of the lack of platforms truly leveraging their potential. This market is served today by legacy electricity suppliers and fledgling VPPs. The majority of the electricity supply market is dominated by formerly state-owned monopolies who built systems to serve customers before the rollout of smart meters. They are not able to process consumption and generation data at the required speed and granularity to unlock the upside of distributed, real-time flexibility. The result is below-market rates and poor incentives for DER operations.

We need a framework to make installing and operating DERs both effortless and attractive. Unlocking the latent GWs of DER capacity will accelerate the transition to decentralised, secure grid systems and ultimately energy abundance, without having to rely on central governments to deploy vast grid infrastructure.

## 1.3.2

# A new age of progress

Energy is a fundamental cost component to doing anything in the real world. Energy abundance describes a world where power is clean, affordable, and effectively limitless, removing a core constraint that has historically governed growth.

With energy abundance, many advancements considered infeasible today become viable: global terraforming; natural disaster prevention; low-cost superscale AI; weather control; and the global desalination of water.

To realise this future, people need to drive the change. They should be incentivised for providing demand flexibility and installing and operating DERs – the nodes that unlock gigawatts of capacity in exactly the places we need it. They will be the foundation of our new, resilient, intelligent grid systems.

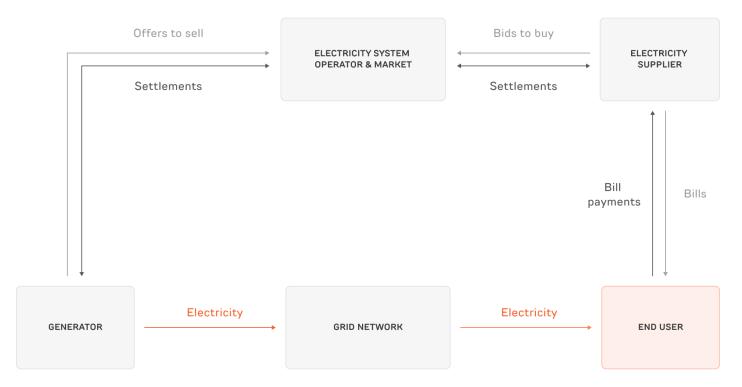
## **Electricity markets**

#### 2.1

## Balancing the grid

To unlock the full value of DERs, they need to be able to take advantage of various incentives and inefficiencies in regulated electricity markets. Electricity markets exist to reconcile the physical flows of electricity with financial flows between generators, traders, and suppliers. This reconciliation is enabled through metering of electricity. All generation and supply points in our electricity grids, as well as key junctions in transmission and distribution lines, are metered to track where electricity is generated and consumed.

Meter points are assigned ownership to a regulated entity. This could be a retail supplier, VPP, or an energy trader. It is their responsibility to ensure that the grid operators know in advance how much electricity their assigned meter points will be consuming or generating. These entities then need to net their expected consumption or generation to zero through the purchase or sale of electricity. This process ensures that supply and demand always equate, and is known as balancing a position. At an aggregate level, the goal of grid operators is to ensure supply and demand are always balanced on their networks.

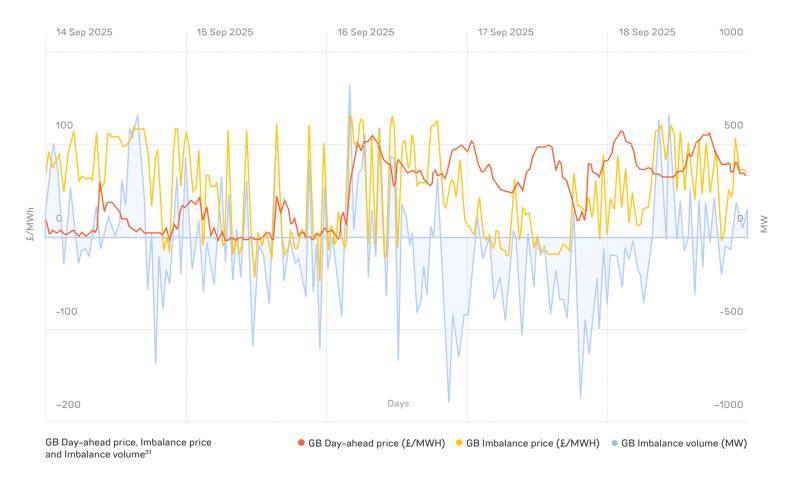


How the electricity market works

If entities fail to balance their position, grid operators generally cover the delta by dispatching ancillary services (e.g. ramping up or down gas peaker plants or batteries on demand). The delta is known as *imbalance*. The cost of imbalance is then charged on a volumetric basis to the entity that caused it. Imbalance prices are often very volatile because they require the most flexible assets to fill in the gaps.

Volatility of prices gives a very strong financial incentive to avoid imbalance. The result is the existence of multiple markets, most notably day-ahead and forward markets, where generators, suppliers, and other participants can balance their positions ahead of time based on forecasted load, reducing their exposure to imbalance.

In addition to imbalance, grid operators charge fees for use of their transmission and distribution networks, which gets passed down to end users. These fees typically peak during times of higher demand, when limited capacity can lead to higher network congestion pricing. These charges compound the incentives to avoid periods of peak demand.

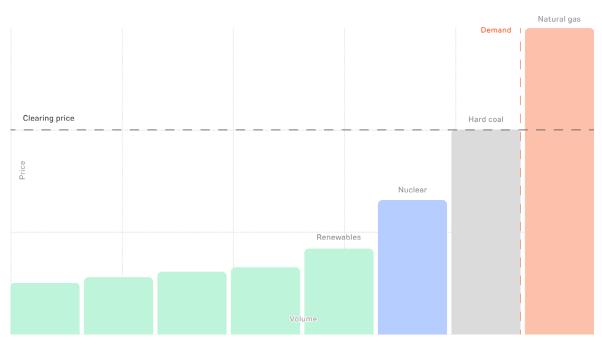


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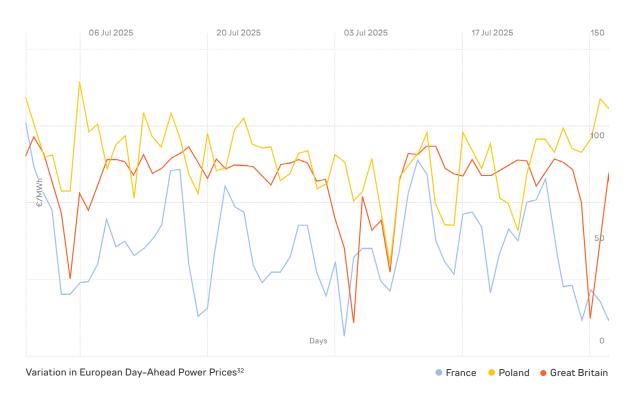
# Day-ahead markets

Day-ahead markets first emerged as part of broader efforts to deregulate and introduce competition into previously monopolistic electricity industries. They allow generators, suppliers, and traders to buy and sell electricity one day in advance for granular intervals (ranging from 15 minutes to one hour), reducing their exposure to imbalance. Generators submit offers to turn on and suppliers submit bids to serve their customer demand. For price discovery, day-ahead markets use a pay-as-clear model.

Under a pay-as-clear model, all successful orders are filled at the same price, known as the market clearing price. The clearing price is set by the intersection of aggregate supply and demand curves. The ascending ranking of generation offers in the supply curve is known as the *merit order stack*.



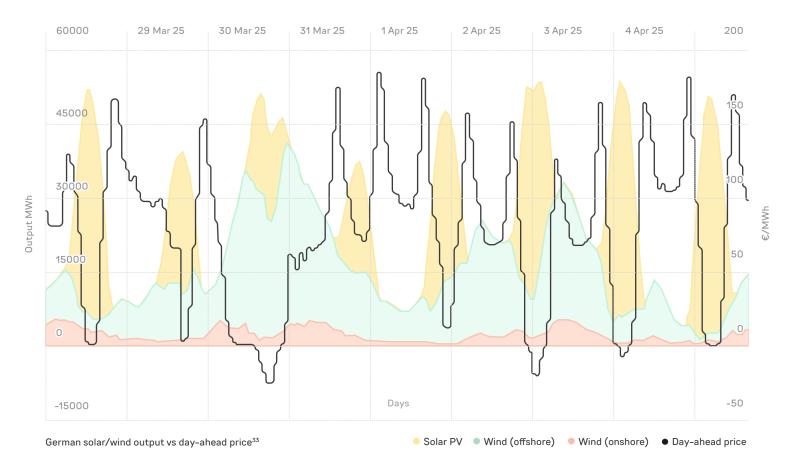
How the electricity market sets prices



The auction clears at the price of the most expensive generator in the merit order stack that meets the demand curve. For example, a wind farm might offer to sell a set volume at \$40/MWh, while a supplier bids to buy it at

60/MWh; if the market clears at 50/MWh, both transact at that price.

Generators with lower operational costs (e.g. wind, solar, and hydroelectric plants) typically offer lower prices and appear at the beginning of the stack. As a consequence, their offers are regularly filled. Offers from more expensive plants (e.g., gas and coal-fired plants) appear further up the stack and are filled less often. Across different global markets, day-ahead prices tend to have a distinct shape, driven by variations in fuel mix and demand patterns.



While the pay-as-clear structure ensures that the most cost-effective resources are used first, it is not efficient when the market contains forms of generation with materially different costs of production. The output of technologies like solar and wind, while cheap, are intermittent. When they generate enough to meet demand, the market clearing price is low or even negative, as seen in an example from the German market above. When these technologies do not cover all of the demand, the market clears at the price of a more expensive fuel, such as gas or coal.

The result is an inefficient market: high prices for the end user, and windfalls for energy giants. This was acutely felt during the global energy crisis.<sup>34</sup>

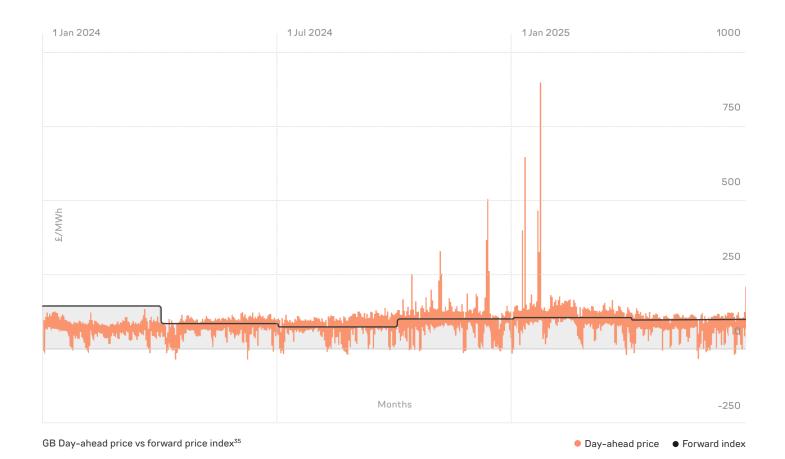
As solar and wind become more pervasive, and set the clearing price more often, gas and coal plants have less periods in which to recover their costs, pushing their offers up and leading to further increases in volatility during peak periods. By coordinating how DERs consume, store, and export electricity, demand can be shifted away from expensive peak hours and into cheaper off-peak periods. In practice, this means households or businesses can draw from their own stored or self-generated energy when prices rise, and recharge or consume more when prices fall. The ability to flex demand into cheaper periods, and avoid time-varying grid congestion charges, is the key economic incentive we took to leverage in this whitepaper.

#### 2.3

#### Forward markets

Day-ahead markets are characterised by a level of price volatility that can be challenging for many retail and commercial contributors. Beyond the evolving fuel mix detailed above, prices in these markets fluctuate significantly due to a variety of fundamental short term factors, including changes in demand, fuel prices, and weather impacting the availability of renewable energy sources. In forward markets, energy suppliers engage in hedging activities to mitigate this volatility and ensure a more stable price of electricity for their users. Forward markets allow suppliers to lock in electricity prices for future delivery periods, hedging against the unpredictability of day-ahead and imbalance prices.

The forward markets for electricity feature various products designed to meet the specific needs of market participants. Given forecast uncertainty over longer time horizons, forwards usually cover longer blocks of energy than those observed on the day-ahead market and are bought over time as part of a supplier's hedging operations.



However, as illustrated in the chart above, the resulting forward index frequently dislocates substantially from day-ahead prices, often due to macroeconomic and geopolitical events. Flexible demand unlocks arbitrage opportunities across these markets.

In summary, we are observing dislocations between day-ahead and forwards prices, increasing volatility due to the effect of new technologies in the merit order stack, and mounting incentives for participants and grids to avoid imbalance. The result is a clear economic basis for a system of DERs that can take advantage of these market dynamics.

#### 2.4

# Ancillary markets & demand flexibility

As regulators unbundled monopolies and established power markets for competitive energy trading, ancillary services arose to maintain stability and reliability.<sup>36</sup> Ancillary services

are a suite of products procured by a grid operator to manage system stability, funded by the imbalance payments detailed in the preceding section.

The goal of ancillary services is straightforward: keep supply and demand balanced, hold voltages in acceptable ranges, and guarantee restart capability after major grid faults. Many system operators procure ancillary services through competitive auctions (often pay-as-clear) to ensure the required quantity and quality of services are available when needed. Ancillary services are becoming a large potential value stream for DERs, which can be aggregated to serve its various products. In the U.S., FERC Order No. 2222 explicitly opened ancillary markets to aggregations of DERs, addressing size, metering, and telemetry rules so small groups of assets can act like a single resource.<sup>37</sup> Similar frameworks exist or are emerging in other jurisdictions.<sup>38</sup>

Demand flexibility is now recognised as a core resource for reducing grid congestion, supporting intermittent renewables, and managing demand peaks.<sup>39</sup> Markets for demand flexibility are developing, with examples including the Demand Flexibility Service and Local Flexibility Markets in the UK and Distribution Load Relief and Proxy Demand Resource programmes in the U.S. These programmes all present further opportunities for DER owners to monetise their everyday assets.

#### 2.5

# Filling the gaps

Our outdated grid infrastructure is being tasked to support both unprecedented demand (due to data centres, re-industrialisation, and electrification) and increasingly volatile supply (due to the renewable buildout). While renewables drive costs down, they contribute to price volatility due to inefficient market structures and a lack of demand flexibility. As forecasting becomes more difficult, imbalance costs are increasingly pertinent. Ultimately, operators are becoming more reliant on strained ancillary services to mitigate the threat of blackouts. Grids are crying out for support.

All of these factors present opportunities for new technologies. Flexible DER and demand capacity allows us to avail of market incentives to reduce imbalance, stabilise the grid, reduce reliance on expensive fossil fuel peaker plants, and capitalise on dislocations between forward and day-ahead pricing. This is in addition to availing of programmes across markets that explicitly incentivise DER operations. The incentives are there, millions of DERs exist already, millions more can be installed. What is missing is a platform that can effectively coordinate and leverage this latent capacity.

# The Energy Network

#### 3.1

#### Introduction

Energy abundance relies on the development of intelligent, responsive grid systems. The Energy Network (the "Network") is built to coordinate the deployment and operation of demand flexibility and DERs to achieve that end. The underlying incentive mechanism is provided via the project's native Token, the Energy Dollar (\$ENERGY).

Fuse is the team that will build The Energy Network. Fuse is a licensed electricity retailer, generator, trader and DER installer, built to unlock the potential of Energy Dollars. Fuse will provide the Network with utility from day one. Fuse has assembled a team of the best people possible to solve the fundamental problems in energy. The team is entirely technical, coming from companies such as Revolut, SpaceX, Citadel, Jump Trading, CERN, and Tesla.

Energy Dollars will reward those who contribute most to accelerating the development of the Network. Rewards will be distributed to users for connecting DERs and shifting their demand out of peak price periods. Rewards can then be burned to unlock discounts on goods and services in the Network, for example: purchases of EV chargers; installations of batteries. At steady state, the Energy Dollar will

serve as a decentralised utility token supporting a global network of participants and DER nodes.

In order to leverage the millions of DERs already available, the Network is device-agnostic. Following launch, anyone in a supported region will be able to either connect or manually use their DERs to begin earning Energy Dollars, while alleviating energy price volatility and the strain on our overloaded grid infrastructure. To support the rollout of even more DERs, Fuse is an active and licensed DER installer, having already completed thousands of installations prior to the launch of the Network.

In order to maximise potential participation in the Network, Energy Dollars will be listed on third-party exchanges. This will enable market-driven price discovery and means that Network participants who are net earners of Energy Dollars (large DER owners or highly flexible demand shifters) can sell their Tokens to net burners (participants with high demand for cheap energy and DERs).

For many decades, the dominant global currencies have been supported by oil markets.<sup>40</sup> There is an alternative future, where a flexible energy economy is self-sufficient and decentralised, underpinning an abundant society. The Energy Network is built to realise this future.

#### 3.2

## **Principles**

The Energy Network is designed and operated based on the following principles.

#### **Abundance**

The Network follows the principle that energy abundance requires cheap, reliable supply, and incentivises activities accordingly. Shifting energy usage provides the flexibility to move demand out of peak price periods, increasing market efficiency and reducing prices for all market participants. DERs serve, through the Energy Network, as an asset base for grid operators to increase grid reliability via on-demand

dispatch and consumption. This dual benefit of cost and reliability is essential to building an energy abundant economy and the development of the Network will be targeted towards such activities accordingly. To maximise accessibility, users without DERs will be able to manually shift their energy usage for rewards.

#### Merit

The goal of the Network is to distribute rewards to where they are needed most. Energy is non-fungible across time and space, so resources deployed in one market or period cannot be used to meet grid and economic needs in another market or period. As a result, the distribution of Energy Dollars will be based on the value of an action to demand flexibility at a given time in a given market. This aligns with the market forces of high prices, network charges, and volatility implying a higher need for flexibility. In simple terms, participating in the Network in locations with higher electricity prices will result in higher rewards for the participant. Rewards are distributed for real value.

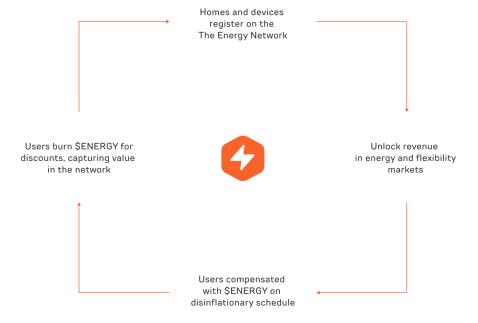
#### **Urgency**

Energy Dollar rewards are distributed in a recurring manner, reducing over time on a disinflationary schedule. This gives users an additional incentive to join the Network early and to regularly engage with the Network. This addresses the cold start problem inherent to launching a new network, while aligning the long-term goals of the network with short-term user incentives. In line with this principle, participants are disproportionately rewarded by the Network for contributing to grid reliability and energy abundance early, before it's too late.

#### 3.3

## **Tokenomics**

The lifecycle of an Energy Dollar in the Network is as follows: users connect DERs to the Network; DERs and manual user behaviour are leveraged by the Network in energy and flexibility markets; Token rewards are distributed according to a prescribed rewards schedule; the Token is burned by the participant to unlock discounts on DERs or energy-related products and services.



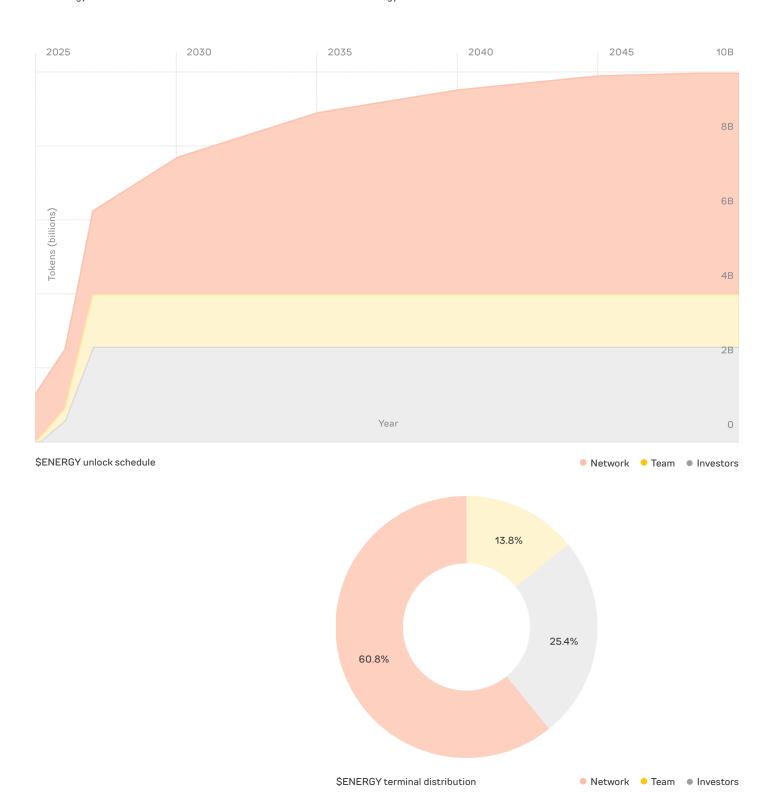
The lifecycle of an Energy Dollar

There will be a capped supply of 10 billion Energy Dollars minted by the Issuer over the course of the 2025-2050 period. At the terminal point, the Network will be self-sufficient, and Energy Dollars will be used as a global energy utility token, supported by a decentralised DER network.

The Network allocation is intended to cover Network rewards, which will be made available over a schedule of 25 years, liquidity requirements, and grants and community incentives which may be provided at the discretion of the Issuer.

In order to align long-term commitments to the Network, no team or investor tokens are unlocked for the first year

#### 3. The Energy Network



following the Network launch. The subsequent unlock schedule is as follows: 20% unlock at each of 12-month, 15-month, 18-month, 21-month, and 24-month dates after the Network launch. Approximately US\$65 million was raised from investors to help establish and jumpstart the Network. All such investors are "eligible investors" in their respective jurisdictions, satisfying certain income and/or net worth criteria.

#### 3.3.1

## **Emissions**

Contributors will be able to earn rewards by using their DERs or shifting their demand to optimal times of the day. For a given period n, the available Energy Dollar rewards  $R_n$  are pre-defined by the Issuer. Rewards subsequently occur with the goal of pro-rata distributions to contributors proportional to their share  $v_n$  of the total value created by the network in that period  $V_n$ . A contributor's rewards  $r_n$  for the period is therefore informed by the below formula.

$$r_n = \frac{v_n}{V_n} R_n$$

The goal is for available rewards to follow the pre-defined  $R_{\text{n}}$  at all times. However, the ultimate reward behaviour of unlocked tokens will lie at the discretion of the Issuer.

## 3.3.2

# **Burning**

Contributors may burn accumulated Energy Dollars to receive discounts or rebates on goods and services within the Fuse ecosystem, such as EV chargers, batteries, solar, and later energy bills and public EV charging. Burning permanently removes Energy Dollars from circulation. As participation in the Network grows, a greater value of Energy Dollars are burned. The maximum amount of Energy Dollars that can be burned is five billion.

The redemption value of burned Tokens for Fuse goods and services is a function of the market price of Energy Dollars on third party exchanges at that time, ensuring a market reflective conversion. For specific goods and services, the absolute discount that can be unlocked through burning will be displayed on purchase.

If users burn their Energy Dollars for a DER, they will then be able to increase their rewards by operating that DER in the Energy Network. This ultimately gives them the opportunity to turn their energy expense into income, while burning acts as a deflationary measure capturing value in the Network over time.

## Network implementation

#### 41

#### Context

Most modern electricity billing and consumer control systems today are not sophisticated enough to unlock the potential of DERs and demand flexibility. The vast majority of providers rely on legacy systems that are not designed to operate at the precision required for effective enrolment and dispatch. As a result, no supplier or VPP has yet been able to truly offer these programmes natively to their users. Fuse has developed an in-house generalisable billing system which enables participants to seamlessly earn and burn Energy Dollars\*.

Implementation of the Network involves the establishment of granular billing systems, DER connection and control mechanisms, and the participation in various grid services and energy markets.

<sup>\*</sup> For the avoidance of doubt, participants will not be able to burn Tokens in exchange for a discount on Fuse products and services until they have been onboarded by a Fuse group entity and passed all necessary onboarding checks and approvals including those relating to client due diligence checks and approvals as required under relevant AML/CFT/CPF laws, regulations and licence conditions (as applicable).

# Network registrations

Participants register their DERs on the Network through the Fuse web or mobile application. No proprietary hardware is required to participate, but the DER must be on a list of approved devices to directly connect to the Energy Network, which will be updated from time to time. To improve accessibility, Fuse allows users without a DER or sufficient connectivity to optimise their energy usage manually for rewards. On launch, the Network plans to support registrations of a large range of popular models of EV chargers, solar inverters, and batteries, with the addition of more DERs such as smart thermostats following launch.

Users can specify device constraints based on their own needs. The Network will then optimise the energy usage of the DER, subject to constraint parameters set by the user.

Constraint parameters may vary by device. Examples include:

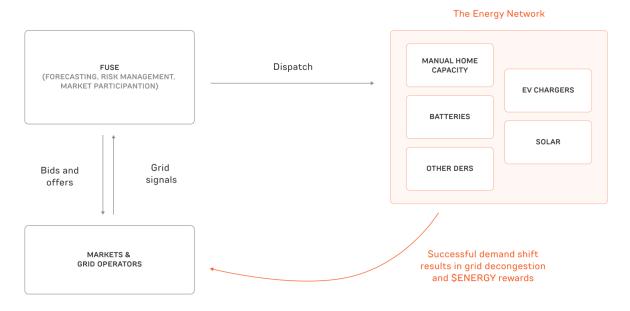
- Device-specific thresholds (e.g. temperature range or minimum battery charge level)
- Time-of-day participation windows (e.g. only respond to grid signals from 5-9pm)
- Minimum contribution settings (e.g. participate only if at least 2 kWh can be shifted)
- Opt-in versus automated participation
- Setting DERs to be "available for use" for a future time period

Once registered, households and DERs can be coordinated over the Fuse application or API to optimise their energy usage based on price and operational signals from the grid. This generates revenue for the Network, either directly from grid operators and utilities or through energy market arbitrage.

In the initial stages of the Network, registration and dispatch will be conducted off-chain, with the intent to gradually move operations on-chain as and when they become viable.

# **Energy market** participation

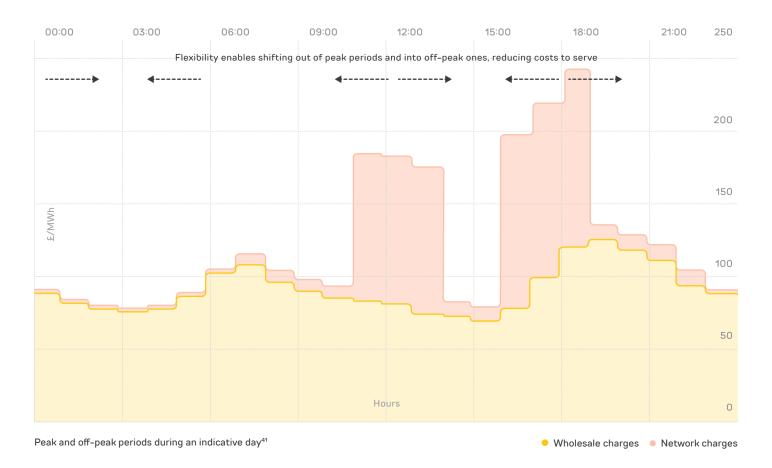
As detailed in Section 2, the current energy economy is highly centralised. In order to participate today, entities need to be regulated on both generation and supply, as they deal directly with physical infrastructure and end contributors. As an energy supplier, Fuse can act as the participation layer between the Energy Network and various energy markets. On launch, the Energy Network will be operational in markets where Fuse is a regulated participant. Fuse services approximately 200,000 homes in the UK with retail energy and installations, with near-term expansion plans for multiple markets across Europe and North America.



Operation of The Energy Network

The price of electricity delivered to a user consists of wholesale energy prices, grid network charges, subsidies, and an operating margin. Wholesale prices are a function of the prices and volumes bought in energy markets outlined in Section 2, which are influenced by market forces and supply factors (e.g. volatile output from renewables).

Network charges, often set by grid operators, are more predictable, peaking during morning and evening periods when households place more load on the grid.



Given the variation in the price of delivered electricity throughout the day, the availability of DERs and shiftable capacity enables time-based arbitrage. This is the route that the Energy Network leverages first. The Energy Network dispatches capacity to shift demand out of high priced hours and into lower priced ones, generating value for the Network by reducing the costs to serve electricity. This can happen passively with no intervention required from users, who are then compensated in Energy Dollars accordingly.

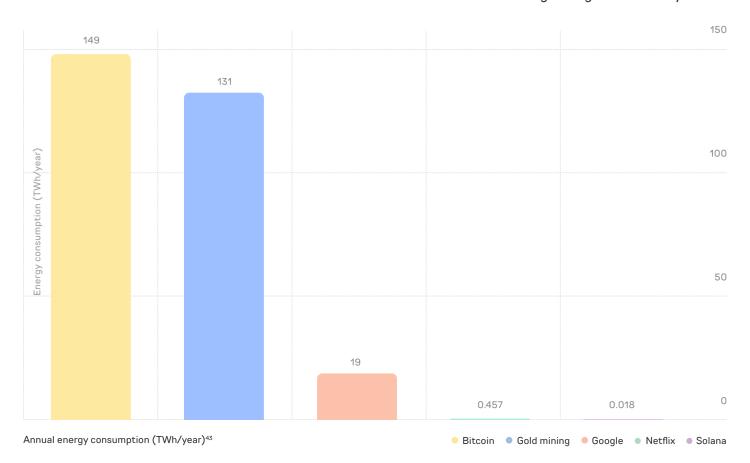
There may also be specific demand flexibility events designated by local or national grids, in which participation can earn Energy Dollar rewards. Participants may have to commit to shifting specific volumes, or be rewarded for every shifted marginal kWh. The ultimate rewards are based on the value of the underlying activity to the Network.

## Token development

Development of Energy Dollars is overseen by the Fuse team. The Tokens will be deployed natively on the Solana blockchain in line with the fungible SPL standard. The Solana blockchain has been chosen due to its strong security foundations; user experience, due to low fees and high transaction throughput; and native token controls.<sup>42</sup> The Solana blockchain's consensus mechanism allows it to scale to millions of users with limited increase in energy consumption.

Tokens will be deployed by the Issuer using native SPL programs. Any programs will be audited prior to deployment by security researchers to ensure security of all user data and tokens.

Users will be able to engage with Energy Dollars through a self-custodial wallet embedded in the Fuse web and mobile applications. They can also transfer Tokens externally to other wallets, allowing them access to other decentralised applications and services across the burgeoning Solana ecosystem.



#### Governance

The Issuer is a private limited company organised under the laws of Jersey, company number 158291 registered on 7 February 2025. The Issuer's registered office address (and principal operating establishment) is at 13 Castle Street, St Helier, Jersey, JE2 3BT. The Issuer is a no par value company and is authorised to issue an unlimited number of shares with no par value of one class, designated as Ordinary Shares. As at the date of this document, the Issuer has one (1) issued and outstanding share. The sole member of the Issuer is Fuse Laboratories Limited.

The Tokens are governed by the board of the Issuer. The board's guiding principles are to accelerate abundance, the development of new and clean technologies, and the decentralisation of the energy economy.

The board will be comprised of two directors provided by Fuse, with the remaining members of the board being provided by the Issuer's Jersey corporate services provider, Suntera:

- Alan Chang
- · Charles Orr
- Ryan Taylor
- · James Muir
- Angela Morris

This setup ensures that in the early stages of the Network, decisions can be made swiftly and efficiently to grow the network in line with the vision laid out in this document.

# DER trends and future implementation

### 5.1

## Looking forward

As the Network develops, Fuse will continue to build and support the infrastructure behind it. Fuse is perfectly positioned to do this as it already builds and optimises utility scale solar and wind generation; operates a DER installation business; and is a regulated supplier of electricity in the UK with ongoing licence applications in Europe, the U.S., and other global markets.

As the Energy Network grows with time, more markets will become viable for DER flexibility, increasing the value-creating potential of the Network. Where the range of goods and services available through the Fuse ecosystem and its partners increases, the potential utility of Energy Dollars also increases. In the future, Fuse may allow users to use Energy Dollars to pay for regular energy bills, or other products and utilities, some of which are outlined in the following sections.

#### **EV** infrastructure

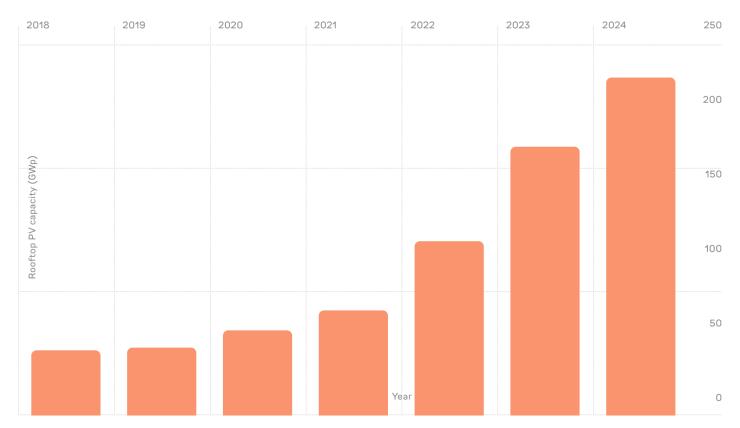
To meet the growing demand for electric vehicles, a significant expansion of EV charging infrastructure is necessary. The European Union alone will require approximately 6.8 million public charging points by 2030 to support the increasing number of EVs. Investment in this infrastructure is substantial, with estimates suggesting a total of €280 billion will be needed by 2030.<sup>44</sup> This includes costs for installing new charging points, upgrading power grids, and increasing renewable energy capacity.

To support long-distance road travel, the number of fast public chargers, particularly DC fast chargers, is increasing at a faster rate compared to AC chargers. For instance, the number of DC chargers grew by 96% from 2022 to 2023, while AC chargers increased by 57%.<sup>45</sup> There is a large opportunity for this need to be met through a combination of both commercial and residential charging providers. Fuse is developing a public EV charging network, complete with smart EV route optimisation, to facilitate the shift to electrified road transportation. In the future, Fuse may enable Energy Dollars to be redeemed across an international network of public EV chargers, further increasing the utility and consumptive quality of the Token.

#### 5.3

## Solar & storage

The landscape for residential rooftop solar and battery storage systems is witnessing unprecedented global growth. Countries like Australia, Germany, and India are at the forefront of this growth. Australia's vast solar capacity, supported by abundant sunshine and robust government rebates, has surpassed 4 million installations. India's ambitious solar targets and subsidy schemes are bridging the gap towards its renewable energy goals. Together, these developments signify global momentum towards a more energy-sovereign residential sector.



Annual rooftop PV insatllations (GWp, DC, global)47

The economics of purchasing residential rooftop solar panels and batteries has also become increasingly compelling for homes. The declining cost of the technology, combined with the longevity and low maintenance of solar systems, means modern systems pay for themselves more quickly. Moreover, the addition of battery storage amplifies these economic benefits by enabling homeowners to store excess energy generated during peak sunlight hours for use during periods of low sunlight or high demand, further reducing reliance on the grid and protecting against variable electricity rates. These trends all contribute positively to the growth of the Energy Network.

Progressive electricity markets also offer export programs, allowing homeowners to sell excess energy back to the grid, creating an additional revenue stream and enhancing the financial attractiveness of solar and battery systems. In the future, Fuse may allow users to earn Energy Dollars for exporting energy from their solar, battery, or EV back to the grid.

A historically underserved market for DERs is that of home renters. Many DER devices are installed as fixed components in the home, so are often not viable or practical for people regularly moving residences. To solve this problem, Fuse is

currently developing a plug-and-play solar-battery product, which is mobile and does not require any specialist installation. The product is designed to be easily moved, making demand flexibility viable for home renters. This would unlock a much larger addressable market for DERs and demand flexibility, accelerating both the accessibility and growth of the Network.

As we progress through the next 25 years, numerous trends present opportunities for the growth of the Energy Network. Fuse is committed to its continuous development into the future, to unlock energy abundance and ultimately the next era of human progress.

#### Risk factors

You should carefully consider the following risk factors, together with all of the other information included in this white paper, before you decide whether to acquire Tokens.

All of the risk factors described below may occur cumulatively, interact and thereby exacerbate each other. In addition, some risks (which appeared not material at the time of drafting, or any facts of which the Issuer is not currently aware) may have an impact subsequently and result in a significant reduction in the value of Tokens.

No Historical Market, Lack of Liquidity and Market Depth: The Tokens are a brand new digital asset with no operating history and no historical market. Newly launched digital assets such as the Tokens may suffer from lack of adoption, limited liquidity and shallow market depth, making it difficult for Token holders to buy or sell large quantities without significantly affecting the price.

Conflicts of Interest: There may be conflicts of interest between the Issuer, Fuse, Alan Chang and Charles Orr. Failure to appropriately address and mitigate such conflicts of interest could have an adverse impact on the Tokens and Token holders.

Renewable Energy Technology Adoption: The Tokens rely in part on the continued and increased adoption of renewable

energy technologies such as DERs. The renewable energy industry is relatively nascent and subject to rapid changes. Unfavourable or disadvantageous changes in the renewable energy industry could have material effects on the Tokens.

Market Volatility and Price Fluctuations: The digital asset market in which the Tokens operate is unpredictable and highly volatile. Prices can fluctuate dramatically within short periods, potentially leading to significant losses for Token holders.

Competition from Established or Similar Digital Assets: The digital assets market is highly competitive, with numerous established digital assets competing for market share and investor attention, potentially limiting the growth prospects of the Tokens. Competitors may launch digital assets similar to the Tokens, which in turn could adversely affect the value of the Tokens.

Adoption and Network Effects Risks: The success of a digital asset depends on its ability to attract users and achieve network effects. The Network may experience difficulties attracting new users and may ultimately be unable to expand the network.

Scalability and Transaction Speed Risks: Scalability issues and slow transaction speeds can hinder the usability and adoption of a digital asset, particularly during periods of high network activity or congestion. The Tokens may be subject to scalability issues and transaction speeds, reducing interest in the Tokens.

Legal and Jurisdictional Risks: Digital assets operate within a complex legal and regulatory landscape, with risks related to compliance, taxation, and legal enforcement actions that vary across jurisdictions and could affect the viability and value of the Tokens. Changes in this landscape could negatively impact the value of the Tokens.

Third-Party Risks, including Exchanges and Wallet Providers: Users rely on third-party services such as exchanges and wallet providers to interact with the Tokens, exposing them to risks such as security breaches, insolvency, and fraud.

Market Manipulation and Insider Trading Risks: The digital assets market is susceptible to manipulation and insider trading, which can distort prices and undermine the integrity of the market, posing risks to market participants.

#### Technological Vulnerabilities and Security Risks:

Digital assets are susceptible to technological flaws and cyberattacks, such as hacking and phishing, which could compromise user funds and undermine confidence in the Token's security.

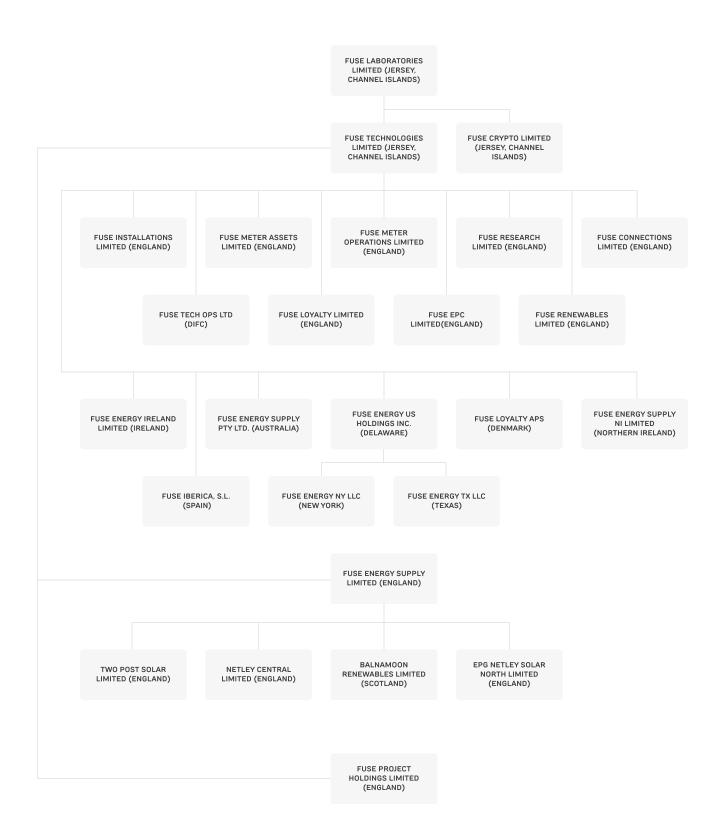
**Token Distribution Risks:** The initial distribution of Tokens may face challenges such as concentration of ownership, unequal access to tokens, or regulatory scrutiny, which could affect the fairness and legitimacy of the distribution process.

**Geopolitical and Macroeconomic Risks:** Digital assets may be influenced by geopolitical events and macroeconomic factors, such as government policies, economic downturns, or global financial instability, which could impact investor sentiment and the value of Tokens.

Smart Contract Risks: Smart contracts, which automate the execution of agreements on blockchain platforms, are susceptible to coding errors and vulnerabilities, potentially leading to financial losses or unexpected outcomes for users.

Negative Public Perception: Digital assets are subject to negative public perception for various reasons, such as their largely unregulated nature and their potential negative impact on the climate. The Tokens may be subject to similar negative perceptions, whether or not justifiable, which may affect the value and the widespread adoption of the Tokens.

# Appendix 1 Fuse Group structure



NAME	JURISDICTION	COMPANY NO.	BUSINESS
FUSE LABORATORIES LIMITED	JERSEY, CHANNEL ISLANDS	142579	HOLDING COMPANY
FUSE TECHNOLOGIES LIMITED	JERSEY, CHANNEL ISLANDS	142579	HOLDING COMPANY
FUSE CRYPTO LIMITED	JERSEY, CHANNEL ISLANDS	158291	TOKEN ISSUER
FUSE ENERGY SUPPLY LIMITED	ENGLAND	139942	ENERGY SUPPLY
TWO POST SOLAR LIMITED	ENGLAND	08469701	SOLAR FARM
BALNAMOON RENEWABLES LIMITED	SCOTLAND	13063948	WIND FARM
NETLEY CENTRAL LIMITED	ENGLAND	SC272029	SOLAR FARM
EPG NETLEY SOLAR NORTH LIMITED	ENGLAND	14978452	SOLAR FARM
NETLEY NORTH GRIDCO LIMITED	ENGLAND	08781534	ENTITY TO GOVERN SHARED GRID CONNECTION
FUSE INSTALLATIONS LIMITED	ENGLAND	12217864	SOLAR PANEL INSTALLATIONS
FUSE METER OPERATIONS LIMITED	ENGLAND	15390782	METER OPERATOR
FUSE RENEWABLES LIMITED	ENGLAND	15056258	HOLDING ENTITY FOR FUTURE INFRASTRUCTURE FUND
FUSE METER ASSETS LIMITED	ENGLAND	14954582	METER ASSET PROVIDER
FUSE LOYALTY LIMITED	ENGLAND	14920288	UK CRYPTOASSET SERVICES
FUSE LOYALTY APS	ENGLAND	13946428	EU CRYPTOASSET SERVICES
FUSE ENERGY SUPPLY NI LIMITED	NORTHERN IRELAND	44286459	ENERGY SUPPLY
FUSE ENERGY US HOLDINGS INC.	DELAWARE, USA	NI716180	HOLDING COMPANY
FUSE ENERGY NY LLC	NEW YORK, USA	6587286	ENERGY SUPPLY
FUSE ENERGY TX LLC	TEXAS, USA	7206630	ENERGY SUPPLY
FUSE ENERGY IRELAND LIMITED	REPUBLIC OF IRELAND	0805373089	ENERGY SUPPLY
FUSE EPC LIMITED	ENGLAND	766491	SOLAR AND WIND FARM EPC
FUSE ENERGY SUPPLY PTY LTD.	AUSTRALIA	15950462	ENERGY SUPPLY
FUSE CONNECTIONS LIMITED	ENGLAND	681 251 525	INDEPENDENT CONNECTIONS PROVIDER
FUSE TECH OPS LTD	DIFC	11049	RESEARCH
FUSE ENERGY IBERICA, S.L.	SPAIN	B75274035	ENERGY SUPPLY
FUSE RESEARCH LIMITED	ENGLAND	16279356	RESEARCH
FUSE PROJECT HOLDINGS LIMITED	ENGLAND	16851696	HOLDING COMPANY

## Appendix 2 Service providers

#### Company secretary

The Issuer's company secretary (a regulated entity licensed to provide company secretarial services) is Suntera Trustees (Jersey) Limited, and whose registered office address is at 13 Castle Street, St Helier, Jersey, JE2 3BT.

#### Legal advisers

- Freshfields Bruckhaus Deringer LLP (UK legal matters)
   100 Bishopsgate, London, EC2P 2SR
- Latham & Watkins LLP (US legal matters)
   1271 Avenue of the Americas
   New York, NY 10020 United States
- Walkers (Jersey) LLP (Jersey law matters)
   PO Box 72, Walker House, 28-34 Hill Street, St Helier,
   Jersey JE4 8PN

#### **Auditor**

Johnsons Financial Management Limited 1–2 Craven Road, Ealing London, W5 2UA

#### **End notes**

- 1. https://www.iea.org/reports/global-ev-outlook-2025/trends-in-electric-car-markets-2
- Assuming ~16,000 km driven per year, consuming 0.2kWh per km, and a reference small household annual usage of 3.100kWh
- 3. https://www.goldmansachs.com/intelligence/pages/Al-poised-to-drive-160-increase-in-power-demand
- 4. https://ourworldindata.org/grapher/energy-use-per-person-vs-gdp-per-capita
- 5. https://www.iea.org/data-and-statistics/charts/global-electric-car-sales-2014-2024
- 6. https://www.iea.org/reports/global-energy-review-2025
- 7. https://www.realinstitutoelcano.org/en/analyses/the-volatility-of-energy-prices-and-its-effect-on-industry/
- 8. https://www.iea.org/reports/power-systems-in-transition/climate-resilience
- 9. https://ourworldindata.org/child-mortality
- 10. https://ourworldindata.org/global-education
- 11. https://www.bcg.com/publications/2025/breaking-barriers-data-center-growth
- 12. https://ember-energy.org/data/european-wholesale-electricity-price-data/
- $13. \quad \text{https://iea.blob.core.windows.net/assets/4e608055-bbc8-4cac-914c-f9f17a772c59/ElectricPowerTechnology.pdf} \\$
- 14. https://www.lazard.com/research-insights/2023-levelized-cost-of-energyplus/
- https://www.cambridge.org/core/books/legacy/public-goods-andzero-marginal-costs/1DC4DFF3EA42F6C1171BFD7F1C36A04B
- 16. https://www.lazard.com/media/uounhon4/lazards-lcoeplus-june-2025.pdf
- 17. https://www.iea.org/reports/electricity-grids-and-secure-energy-transitions/executive-summary
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- 19. https://www.neso.energy/document/350256/download
- $20. \quad https://www.iea.org/repborts/electricity-grids-and-secure-energy-transitions/executive-summary$
- 21. https://www.neso.energy/document/350256/download
- 22. https://www.neso.energy/document/350256/download
- 23. OFGEM Energy Price Cap Q4 2025
- 24. https://www.sciencedirect.com/science/article/abs/pii/S0378437117308932
- 25. https://www.ey.com/en\_au/insights/sustainability/is-australia-ready-to-orchestrate-distributed-energy-resources
- 26. https://www.utilitydive.com/news/wood-mackenzie-sees-217-gw-new-distributed-energy-resources-2028/720581
- 27. https://www.eia.gov/todayinenergy/detail.php?id=65244
- 28. https://www.iea.org/reports/unlocking-the-potential-of-distributed-energy-resources
- 29. https://www.mdpi.com/1996-1073/15/13/4676
- 31. European Power Exchange, UK Balancing Mechanism Reporting Service
- 32. European Power Exchange
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