

ARTICLE

Lifeboat money: Economic strategies for human survival

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Drawing on historical experience with stamp scrip during the Great Depression, Dr Shann Turnbull revisits the concept of ‘lifeboat money’ – an emergency local currency designed to keep economies functioning in times of crisis. He argues that, in digital form and linked to a sustainability index, such a currency could realign market incentives away from carbon-intensive activity while supporting human wellbeing.

Introduction

In 2022, the United Nations Secretary-General stated that we were “on a highway to climate hell with our foot still on the accelerator” (Frangoul, 2022). There are eight billion feet on the accelerator. But no one has proposed to stop market failure driving climate change. In other words, to get eight billion people to take their feet off the accelerator and put them on the brake.

In 2006, Lord Stern (Stern, 2006, p. viii) advised the UK government, “Climate change is the greatest market failure the world has ever seen”. But he made no recommendations to stop market failure. Instead, Stern only recommended amelioration with “tax, trading and regulation” (Stern, 2006, p. viii). This is like placing an air purifier on the exhaust pipe of carbon-burning automobiles. Or like trying to run up an escalator going down to a “climate hell – with our foot still on the accelerator”. In these ways, humanity is sleepwalking into what leading scientists describe as a “ghastly future” (Bradshaw *et al.*, 2021).

Market failure arises when money creates price signals that generate incentives to harm people and the planet, such as burning carbon. This poisons our atmosphere with excessive carbon dioxide that heats our environment. We urgently need a monetary system that creates incentives to not only stop the burning of carbon but also stop other degradations of our atmosphere, oceans, rivers, lakes, soils and biodiversity of flora and fauna, as well as prevent us from consuming non-recyclable resources.

System science informs us that controlling so many variables require a requisite variety of control agents in each bioregion of our planet. Direct engagement is required with the eight billion people and the corporations responsible for burning fossil fuels and other forms of environmental degradation. However, the Law of Requisite Variety (Ashby, 1956, p. 268) "prohibits any direct and simple magnification [of control] but does not prohibit supplementation". This means that a requisite variety of supplementary co-regulators are required to simplify the regulation of complexity (Turnbull and Guthrie, 2019).

Modernity has allowed humanity to become disconnected from being governed by the endowments of nature that can sustain humans in each bioregion for eternity. Survival requires individuals in each bioregion and their sub-regions to possess the power, incentives and cultural capability to maintain a population density consistent with everlasting sustainability within their region.

An example of this approach is traditional Indigenous Australians. They were intimately connected with their country. They considered themselves to be part of nature and so governed by it. As a result of this worldview, they always had obligations to care for the country and allow

it to maintain its wellbeing. They saw themselves as "ownees" (Turnbull, 1980, pp. 163, 164) of the country. Not owners, or just custodians or stewards of the country.

Words are the tools of thinking. Without words like "ownee" (Turnbull and Poelina, 2022, p. 12), we do not have the intellectual tools to understand Indigenous relationships and practices. This may deny individuals in modern societies the capacity to appreciate Indigenous wisdom (Turnbull and Poelina, 2022, p. 12) and learn how modern societies could likewise become sustainable (Turnbull *et al.*, 2023). Some Indigenous authors (Damoah *et al.*, 2024) may become intellectually colonised by modern, irrelevant, dysfunctional totems like economic values and prices.

Indigenous Australians used "message sticks" to invite hundreds of individuals from distant places, involving weeks of travel, who spoke different languages to a specific place at a particular time in the future to hold weeklong corroborees for specific purposes (Turnbull, 1980, p. 8, pp. 163–164). Our monetary system also acts as a message stick but with dysfunctional messages of what natural resources need nurturing, recycled and consumed to service society without depletion.

Indigenous knowledge about their environment was stored and shared in song lines. Survival knowledge was stored in hundreds of languages used in each bioregion or sub-region, as each also possessed different terrain, geology, climate, seasons, flora and fauna. However, none of their hundreds of languages had words to describe undefinable modern dysfunctional social constructs like economic value, money or markets that are driving climate change.

As described by Elinor Ostrom (Ostrom, 2009) in her Nobel Prize acceptance lecture, "markets and states" are not required by competing interests to

cooperate in self-governing life-sustaining resources for everyone. Indigenous Australians have demonstrated this ability for at least 65,000 years. This is longer than any other existing culture.

However, technology and the interconnectedness of local problems globally have now created a need to introduce markets for sustainable global wellbeing. This is because not all regions can establish fully self-sufficient circular economies. Trade will be required between regions to share surpluses and deficits of goods, services and technology.

We need to introduce a sustainability metric for each region to connect citizens to ever-lasting renewable endowments at each location. As each region can have quite different endowments of nature, each region could have various levels of sustainability according to at least three key variables. These are (a) local renewable and everlasting recyclable resources that can sustain human wellbeing; (b) trade to supplement resource deficits and share surpluses; and (c) population levels.

Technology is also crucial. However, assume it can be shared through trade. Cultural and ethical beliefs could also be important in managing regional populations. But it will be assumed that pragmatism will prevail to protect the greater good for unlimited future generations of humanity. If not, humans may not exist to learn that this essay failed in “securing human wellbeing”!

The exchange rates for trading goods and services between regions will be determined by their sustainability indexes' relative levels. Sustainability indexes would subsume the modern undefinable social construct of economic value. This is because economic value becomes irrelevant if humans are not sustained. No concept of economic value is required to allow living things

to become self-regulating and self-governing. Nor are “markets and states” needed to design and operate self-governing automobiles and space explorers.

The purpose of trade would not necessarily be to promote growth, as physical degrowth may be required to achieve sustainability in some regions. The sustainability indexes, not economic value, would guide trade, migration and the sustainable population levels in each region.

The role of system science

System science explains how to manage complexity. Its cybernetic law of requisite variety describes why it is impossible to *manage directly* the complexity of the environmental degradations discussed above (Ashby, 1956, p. 268). However, it also explains how complex problems can be controlled *indirectly* by creating a requisite variety of supplementary co-regulators (Ashby, 1960, p. 285).

Volatile self-referential international money markets currently determine economic value. Relative pricing between currencies is based on speculation on how different economies may perform relative to others. Such unlimited and unknowable speculations become unpredictable, with little relevance to human sustainability.

For example, the unilateral random decisions by some countries to change the interest rate of their monopoly sovereign money can change relative prices. There are even examples where random presidential tweets on social media have significantly changed the relative values of currencies. This means that monetary economics cannot be a rigorous science subject to the laws of nature and be treated as a scientific system. It is merely a widely accepted belief system like a religion.

It also means that international trade and investment is inhibited. Risk is increased because there cannot be certainty as to the relative values of currencies in the future to obtain an acceptable payback. This makes the existing monetary system less efficient. As noted above, it is also dysfunctional as a source of market failure, creating climate change.

Central banking is but a specialised form of central planning. It means the same policies must become imposed on what can be radically different situations. A "one size fits all" policy denies diversity and flexibility.

In addition, the sovereign monopoly money is dysfunctional because it is given the magical power to earn interest, and the Bible forbids that. It allows money to create money. Like a virgin birth, it denies logic and is dysfunctional. It illustrates the power of massive groupthink and brainwashing for people to think illogically. It is a viewpoint that also (a) exacerbates inequality by making the money owners richer, (b) increases inflation by increasing the volume of money while not necessarily increasing either output or productivity to sustain the purchasing power of money, (c) increases the cost of productive investments capable of making nature yield its resources more productively to increase productivity that can reduce inflation, (d) doubles the cost of buying a home over 20 years when interest rates exceed 4% (Kenton, 2025) and (e) creates a basis to discount the future to undermine the ability in 'securing human wellbeing'.

Cryptocurrencies do not earn interest. However, their high energy consumption in mining new coins and validating every transaction exacerbates humanity's sustainability. This cost was neglected in a concept article on how the Central Bank of

India could save costs by replacing its widely used paper money with digital untethered blockchain money (Mahesh *et al.*, 2024). Also unexplored was how a blockchain Central Bank Digital Currency (CBDC) would support interest rate policies. These problems highlight the need for a more stable, low-cost, efficient and competitive form of medium of exchange than existing official climate change-creating currencies or crypto CBDC tokens.

System literacy

A fundamental problem of the current financial system is that it is not a system with physical constraints. It is unlike any natural system regulating living things. This makes it inappropriate for either system science or cybernetic laws to fix the problems created by the current way money is designed.

Its founders defined cybernetics as "the science of control and communication in the animal and the machine" (Wiener, 1948). Both control and communications are dependent upon the transacting of data that is measured in "bits". Hence the name "bitcoin". Eight bits make a byte. Any bit transaction within and/or between biotas and devices involves matter and energy perturbations. This limits data processing and storage by devices, humans and all other biotas. It is now possible to identify the physical ability of humans to receive, store, process, respond and communicate bytes. While no metrics for meaning, knowledge or wisdom exist, no change in these social constructs can occur without transacting bytes. This provides the metrics for a science of governance (Turnbull, 2002; 2008).

However, several social scientists inappropriately apply cybernetic principles and system science laws

to social constructs like money, economics, value, language and even conversations.¹ This makes it crucial for rigorous system science scholars to acquire system literacy to identify the different types of systems. Also, the word “information” has ambiguous meanings.

The public and social scientists commonly use the word “information” to communicate meaning, knowledge or wisdom. Like economic value, these concepts cannot be defined in physical units. However, the pioneers of cybernetics and system science restricted the word “information” to only mean “data”. This distinction is commonly lost by some social scientists who seek to become cyberneticians and system scientists.

In 1948, cybernetics was defined as “The science of control and communication in the animal and machine” (Wiener, 1948). The pioneer of information theory was Claude Shannon. In the second paragraph of his seminal paper, he stated: ‘These semantic aspects of communication are irrelevant to the engineering problem’ (Shannon, 1948). On the same page, he defines his unit of analysis as “binary digits, or more briefly bits”.

Physically, bits represent perturbations in matter and energy that make a difference. Eight bits are described as a “byte”. Today, the word byte describes the operating capabilities of electronic devices and the internet. They can also be used to identify the ability of living things to receive, store, process and communicate data to establish a “science of governance” (Turnbull, 2002; 2008).

Another cybernetic pioneer was Ross Ashby (Ashby, 1956, p. 256). He authored an *Introduction to Cybernetics* in 1956. He likewise used the mathematics of bits to explain how to regulate and amplify the regulation of physical systems.

Ostrom had met Ashby. She articulated the law of requisite variety with the following words: “Any governance system that is designed to regulate complex biological systems must have a variety in the actions that it can take as there exists in the systems being regulated” (Ostrom, 1995). As complexity increases the ability of a centralised command and control hierarchy to provide requisite variety rapidly becomes diminished (Turnbull and Poelina, 2022, p. 26).

Achieving a requisite variety requires engaging with stakeholders, creating the degradations to provide a requisite variety of supplementary co-regulators. To obtain independent voices from each stakeholder constituency requires, what Ostrom describes as “polycentric governance” (Ostrom, 2009). Tethered “lifeboat money” (Turnbull, 2013, 2016, p. 206; 2024a, 2024b) provides a way to communicate between competing regions about their need to share life-sustaining resources, benefiting everyone.

In the next section, we describe lifeboat money, its operations, rejection and whether it could be privately issued legally. The concluding section considers ways to adopt lifeboat money, the different views of economists and how to develop an appropriate tether to keep humanity afloat on an everlasting basis.

Simplified lifeboat money

The need to redesign the nature of money was taken up in the last issue of *BESS* by Fritz and Mallory (2023). Much earlier, the topic was raised by Keynes (1923, p. 153). Keynes (1923) explained that “money is a mere intermediary, without significance in itself, which flows from one hand to another, is received and is dispensed and disappears when its work is done from the sum

1. https://en.wikipedia.org/wiki/Gordon_Pask

of a nation's wealth". Keynes (1923) was describing a simplified form of money that is not complicated by also being a store of value nor a unit of account (Turnbull, 2016).

Simplified money can only be used as a medium of exchange. Modern forms of official currency are more complicated. This is because it also carries out the role of being a store of value and establishing the social construct of price. As noted above, the uncertainties in identifying prices inhibit international trade and investment. It also inhibits the efficiency of markets. It impairs central banks in providing monetary stability with the current form of untethered official money.

The Economist and two former Bank of England (BoE) governors identified the need for a monetary tether to establish stable money. The 6 January 1990, cover story of *The Economist* stated: "Time to tether currencies". Mervyn King declared, "Societies have managed without central banks in the past. They may well do so again in the future." (King, 1999, p. 27). He pointed out that a monetary tether would be a feature of decentralised banking.

To reduce the volatility of official money, King's successor as BoE Governor, Mark Carney, was "intrigued" by the idea of establishing a synthetic hegemonic currency (Carney, 2019). This is what a sustainability index could achieve. It could achieve much more if the nature of money was also simplified to possess limited life like all things ecological. Table 1 identifies 32 ways a sustainability index tethered and terminating sustainable medium of exchange could create a more efficient and sustainable society.

The payment of a digital user fee to the issuers of lifeboat money allows this type of medium of exchange to be traceable. So, in the long run, 'securing human wellbeing' could involve

"3T money" as it would become terminating, tethered and traceable. It would replace the interest policy analysis of official money concerned with "timing, transmission and transaction" (Turnbull, 2016, p. 196).

Official currencies were tethered to a specified weight of gold at the start of the Great Depression. This changed when the US Federal Reserve Bank (Fed) ran out of gold. To avoid the Fed going bankrupt, the emergency first Glass-Steagall Act (Gou *et al.*, 2022) of 1933 allowed the Fed to use government debt as a reserve asset. In this way, the US currency became untethered. However, a year later, hundreds of US banks closed because the Fed lacked sufficient liquid reserves to bail them out.

At this time, hundreds of communities in Europe and North America were being sustained by a simplified form of self-liquidating money (Turnbull, 2016). A handbook on creating, issuing and managing this type of money, described as 'stamp scrip', was published by US economist Irving Fisher (1933). Keynes (1936, p. 357) stated that "the idea of stamped money is sound" and that its inventor was an "an unduly unrecognised prophet Silvio Gesell (1862–1930)" (Gesell, 2019; Keynes, 1936, p. 353).

I describe Stamp Scrip as "lifeboat" (Turnbull, 2013, 2016, p. 207; 2024a, 2024b) money for two reasons: (1) it can keep businesses and local economies afloat when official monopoly money fails, or a pandemic imposes a lockdown; and (2) it can "secure human wellbeing" on an everlasting basis.

Lifeboat money can be created privately and independently of governments because it is intrinsically self-financed, as explained below. Tethered terminating lifeboat money avoids the need for central banks.

TABLE 1. Comparison between official money and tethered terminating lifeboat money

Differences between:		Official money	Lifeboat money: terminating and tethered to a sustainability index
1	Currency area	Nations	Bioregions
2	Choice of currency	Government monopoly	Locally dependent
3	Money created by	Government and banks	Users and their agents
4	Type of money	Complex	Simple
5	Unit of value	Not defined	Bioregional sustainability indexes
6	Inflationary	Yes	No (tethered to sustainability)*
7	Stability of value	Volatile self-referencing	With the level of local sustainability
8	Unit of account	Yes	No
9	Store of value	Yes	No
10	Medium of exchange	Yes	Yes
11	Interest	Unlimited compounding	Negative self-liquidating
12	Interest rates set by	Central Bank	Cost of users to redeem money
13	Ownership revealed	Anonymous	Optional through tracing user fees
14	Size of system	Unlimited	Minimised
15	Cost of system	Increasing to a collapse	Reducing
16	Integrity of regions	Exposed to contagion	Regionally independent
17	Integrity of system	Problematic	Locally self-regulating
18	Sustaining humanity	Not likely	More likely
19	Environment flaw 1	Incentive to deplete	Incentive to sustain
20	Environment flaw 2	No feedback from nature	Nature controls wellbeing
21	Biodiversity	Not relevant	Part of sustainability index
22	Political flaw 1	Concentrates power	Decentralises power
23	Political flaw 2	Little accountability	Local and direct
24	Social flaw 1	Compounding interest	Not relevant
25	Social flaw 2	Concentrates wealth	Decentralised within and between
26	Economic flaw 1	Incentive to burn carbon	Disincentive to burn carbon
27	Economic flaw 2	Distorts prices	Prices replaced with wellbeing
28	Economic flaw 3	Incentive to hold money	Disincentive to hold money
29	Economic growth	Needed to pay interest	Degrowth for sustainability
30	Circular economy	Inhibits self-reliance	Incentive for self-reliance
31	Migration control	Indeterminate	Strong
32	Population control	Little incentive	Mostly urgent

* The buying power of the medium of exchange increases with an increase in the sustainability index

Operations and rejection of lifeboat money

Hundreds of US, Canadian and European communities introduced privately issued stamp scrip (Mitchell and Schafer, 1990) to keep them afloat during the Great Depression. The 1933 Bankhead-Pettengill Bill proposed that the US government issue stamp scrip. It was drafted by Fisher and introduced to Congress on 17 February 1933. This was just two weeks before the inauguration of President Roosevelt on 4 March.

The Bill specified that users buying stamps from the US post office (Champ, 2008) would pay to redeem the notes. Each week, a stamp valued at 2% of the note's face value had to be affixed to its backside. This would generate an income over 52 weeks in a year for the post office of 104% of its face value. The government-owned post office would make a 4% profit even if the *money were distributed as a gift*. The Bill proposed that the money be distributed free of cost to state governments. State governments would then create employment by funding infrastructure projects and providing welfare for the unemployed.

The user cost of lifeboat money can be less than modern electronic official money if it is used quickly. For this reason, stamp scrip was also described as "speed" money. Fisher (1933) reported it circulated much faster than official money. In contemporary times, with electronic money, re-using it as it was received would become feasible. Even if it was only held for a full day, its cost would reduce from 2% over a seven-day week to only $2\%/7=0.29$ cents per dollar of face value. This is less than the transaction cost of "tap and go" smartphone payments, which can be 1.2% or more (Sorensen, 2025).

The ability of lifeboat money to replace the need for central banks introduces an existential conflict of interest for banks when considering the various types of CBDC money they could introduce (Mainelli *et al.*, 2022). Lifeboat money could substantially shrink the size and cost of the financial system. The number of US commercial banks had already decreased from a peak of over 30,000 in 1921 to 14,146 in 1934.² The number halved from 8,315 in 2000 to 4,470 in 2023 (Statista, 2025).

The Federal Reserve system was set up by private banks in 1913 to provide a way to create a lender of last resort in a financial crisis. However, the Fed itself faced failure in 1932 because it had run out of gold reserves (Gou *et al.*, 2022). This resulted in the Glass-Steagall Act, which introduced legislation to allow the Fed to use government debt as a replacement for gold as a reserve (Maues, 1933). But in 1933, the Fed ran out of liquidity.

The Bankhead-Pettengill Bill would not create debt, taxes or even a need for the Federal Reserve to exist. It would allow states, towns and many other entities to issue simplified money. This would further shrink the size of the Federal Reserve System and its cost as a percentage of GDP.

After his inauguration on March 4, President Roosevelt immediately declared a bank holiday for surviving banks on 6 March. It left no time to print a new bill to replace the Bankhead-Pettengill Bill. So, Congressman Steagall had to read aloud a replacement Bill at an emergency meeting of both houses of Congress on 9 March. Without discussion, the Bill was signed into law by the President on the same day to create a "New Deal" for the Federal Reserve. However, 75 years later, the US government had to bail out the Fed again during the 2008 financial crisis (Segal, 2024).

2. <https://www.mercatus.org/economic-insights/expert-commentary/historical-rise-and-recent-decline-number-banks>

The cost of the financial system as a percentage of GDP had grown from less than 2% in the 1870s to nearly 6% before the stock market collapsed in 1929. It rose to 9% in 2010 (Landy, 2013); by 2023, it became the most significant component of GDP, rising to over 20% (Tierney, 2025).

Eliminating complex official monopoly money earning interest with simplified competing negative interest rate money might well reduce the cost of the financial service sector back to single-digit percentages of GDP. This could also make a significant reduction in wealth inequality.

During the COVID epidemic in Australia in 2020 and 2021, state governments enforced lockdowns preventing individuals from earning money and denying consumers movement to spend. State governments responded by gifting money to individuals and firms with money that needed to be borrowed. It was an ideal occasion to issue lifeboat money that needed to be spent quickly and not hoarded.

It is a behavioural mystery why local councils and state governments in Australia prefer to increase taxes and/or debt rather than launch locally created financial lifeboats (Turnbull, 1983, 2020a, 2024a, 2024b). The Australian Constitution, s. 51(viii) carves out powers for states to establish their banking and “the issue of paper money” that today could include its digital tokens.

It is no mystery why national governments do not issue their own CBDC to the public. This is because it could introduce market forces to bypass the need for central banks. This threat emerged globally in June 2019. The widely popular social media platform Facebook announced its intentions to introduce its global cryptocurrency called the “Libra”. A few months later, in December 2019, the *European Financial Review* published the article

“How Facebook money could counter climate change” (Turnbull, 2019). As discussed above, it was based on creating a sustainability index tether for the Libra. The idea for other private financial entrepreneurs unilaterally introducing lifeboat money was published by the *European Financial Review* in July 2020 (Turnbull, 2020b). The legality of this is considered below.

Central bank conflicts of interest

BoE economists in 2003 (Cappie *et al.*, 2003) raised the 1999 question of Mervyn King in 1999: could digital money replace central banks? They concluded that the central bank could exist as it avoided the inconvenience and costs of barter. By design, their analysis neglected to consider either a tethered currency as King had done or a limited life ecological “lifeboat” type of money.

On 12 March 2020, the BoE issued its first discussion paper on introducing a digital currency (Bank of England, 2020). They invited responses from the public to be received by 30 June. The Bank received 132 submissions, including mine, on 12 June on ‘Without a stable unit of value a CBDC becomes flawed’. An online webinar to discuss the BoE introducing a CBDC was held on 7 April, titled *Central Bank Digital Currencies: opportunities, challenges and design*. No tether was mentioned, nor was the banks’ existential conflict of interest. A second discussion paper was issued on 7 June 2021 (Bank of England, 2021). It did not address the BoE existential conflict of interests but discussed “stablecoins”.

To raise the question of how central bank conflicts can be managed publicly, I organised a free online roundtable discussion on 7 July 2022. The session was hosted, moderated and recorded (Mainelli *et al.*, 2022) by Alderman Professor Michael Mainelli.

He became the 695th Lord Mayor of the City of London in 2023. Besides me, the other speakers were two former members of the BoE monetary committee, Emeritus Professor Charles Goodheart and Professor Willem Buiter. Also speaking was visiting Professor Dr Andrew Hilton, the founding executive director of the Institute for Financial Innovations. Mainelli published my article on his Financial Services Club web pages as a conversation starter on 6 June 2022. It suggested that the Treasury Committee of the UK Parliament should manage BoE conflicts (Turnbull, 2022a).

Several commentators (Greenwood *et al.*, 2020; Janda, 2023) and former central bankers like King (Elliot, 2019) expect a new crisis. One of the many reasons is the continuous growth of government debt. The number of countries with government debt more significant than their GDP has grown to 20 (International Monetary Fund, 2025). There is little reason to believe this trend will reduce to avoid increasing debt levels to unsustainable levels and/or other crises. This highlights the short-term need for lifeboat money to keep local economies afloat in another crisis or an epidemic lockdown denying citizens a life-sustaining income.

Could privately issues of lifeboat money be legal?

The initial issues of privately issued stamp scrip were mostly issued without any reference to being a form of money. The first issue in Germany in the 1920s was described as “Wära” (a word compounded of two others, “ware” and “währung”, which mean respectively “goods” and “currency”). The paper payment vouchers were first issued as loyalty credits by retail stores. However, the credits were time-limited and required a small fee to buy a stamp to be affixed to the voucher to extend its life.

In this way, there was no legal basis for its regulation. This could be the same situation today, depending on the specific details. A stamp scrip type of lifeboat money began to circulate in Germany again early this century tethered to the Euro. The European Central Bank recognised its existence by publishing a report on “Virtual Currencies Schemes” (ECB, 2012).

A leading example is the Chiemgau (Gelleri, 2009). Margrit Kennedy (1995; 2012) financially assisted the formation of German regio currencies and formed an association. Kennedy invited me to be the guest speaker at the inaugural association meeting in the Traunstein Rathaus in the Chiemgau region of Southern Germany on 4 February 2006.

Kennedy was one of the co-founding members of the Sustainable Money Working Group (SMWG),³ which we established in 2011. We initially named it the Green Money Working Group (Turnbull, 2011). Its other founding members were organisations, the members of which were involved in, or serviced over, 25 million UK citizens. This is sufficient to determine which party could form a government in a UK general election.

We held our inaugural meeting in the Great Hall of the Institute of Chartered Accountants in England and Wales (ICAEW) on 13 February 2012. The CEO of Coops UK chaired the meeting, representing 18 million members. Another founding member was the British Chambers of Commerce (BCC), the member businesses of which employ over 4.8 million citizens. Other founding members were the ICAEW, with 140,00 chartered accounts servicing millions of clients and the London-based “think and do tank”, the New Economics Foundation.

3. <https://era.org.au/uk-green-money-working-group/>

The BCC's CEO appreciated that there could be uncertainty over the legality of their Chambers issuing lifeboat money for their members to continue to trade in a financial crisis. However, he believed such an initiative would be accepted in an emergency and the law would be changed.

The acceptance of various types of community currencies already exists around the world. Wikipedia lists 20 countries with around 100 different kinds of community, local or supplementing currencies.⁴ They include significant areas like the US, UK, the Euro Zone and Japan.

The EF Schumacher Society promoted local currencies in the US. Before Bob Swann became the founding President of the Society in 1980, he worked with Ralph Borsodi in 1973 to introduce a community currency described as a 'Constant' in the town of Exeter, Vermont (Bacon, 1973; Schumacher Centre for New Economics, n.d). Several of the US community currencies were developed by activists who attended the residential seminars organised by the Society.⁵ One of the activists was a Tasmanian acquaintance, Bill Morrison. He founded the global permaculture movement, which had its first international conference in Australia in 1984, where he met Margrit Kennedy. Lecture notes by Swann, me and others were published as *Building Sustainable Communities: Tools and concepts for self-reliant economic change* (Morehouse, 1997).

There are also official supplementary currencies. One is the Swiss WIR, a self-help system established in 1934 to issue stamp scrip with a negative interest rate of 12%. The user fee was removed in 1948 to provide interest-free credits to householders and 50,000 small and medium-sized businesses. The WIR network owns a bank with seven branches. There is evidence that the WIR

network helps stabilise the Swiss official system (Stodder, 2000). This provides another argument for adopting lifeboat money as a supplementary 'reserve' currency. This is considered in the next concluding section.

Another official encouraged supplementary money is the 'social currencies' in Brazil. Their central bank facilitates self-help, non-profit user and managed currencies like the WIR. The legal counsel to the bank, Marusa Freire, reported (Freire, 2009, p. 83):

“In general, the accounting units of social currencies are set at a standard value, pegged to the unit of the official currency (e.g. Palmares and Rubi, in Brazil; LETS). There are, however, certain exceptions, such as currencies based on time (hours or minutes – e.g., ‘Time Dollars System’ and ‘Japanese Fureai Kippu’) or on physical units e.g. kWhr of renewable energy, generated by popular cooperatives, e.g. WAT in Japan and the Wara currency, used in Germany between 1920 and 1930.”

This is a refreshingly open approach by a central bank promoting locally self-determined decentralised banking. It is consistent with promoting lifeboat money.

Adoption of lifeboat money

The adoption of lifeboat money could be motivated and adopted in many ways. Lifeboat money introduced as an emergency measure from a surprise financial crisis or lockdown from a pandemic would, by necessity, become tethered to the official monopoly money. This would not achieve its most important objective of stopping market failure from creating climate change. Nor would it become capable of countering

4. https://en.wikipedia.org/wiki/Local_currency

5. Simons Rock College, Massachusetts, July 1982; Eugene, Oregon, January 1983; Bard College, New York, June; 1983; New College of California, San Francisco, March 1984; Centre for Neighbourhood Technology, Chicago, March 1984

the complex assortment of other interrelated ways that humans are degrading the life support systems of our planet. It needs to be tethered to a sustainability index in each bioregion worldwide to achieve these objectives.

This objective is represented in line 17 of Table 1, concerned with the “Integrity of the system”. The participation of all bioregions of the planet minimises existential risks. In Ostrom’s words, the global environment represents a “common pool resource” (CPR). CPR is required to maintain the wellbeing of all humans and the environment that has created and maintained them. The idea that humans could replicate such a rich complex supporting bioamines and other supporting forms of biotas on another planet could be much riskier than protecting our home environment.

Unfortunately, the crucial reason for introducing lifeboat money was neglected in an article published by the London-based *Financial Times* in May 2024 (Kyriakou, 2024). The article obtained feedback from various experts on a webinar I presented on lifeboat money earlier in the month. One expert supported my proposal that lifeboat money should be first tested in a regulated “sandbox”. Another expert was Andy Haldane, a former chief economist of the BoE. He did not believe there was a need for lifeboat money in his lifetime. Hopefully, his view could be true concerning any financial or pandemic crisis. But climate change is a known urgent problem that requires immediate action.

While economic experts like Lord Stern can identify “the biggest market failure the world has ever seen”, their expertise seems to deny them the knowledge to remove the cause of market failure. It suggests that money is so sacred that they cannot question if it is appropriately designed.

Different world views by economists

Haldane’s view of central banking appears distinct from that of his former colleague, Mervyn King. In 1999, King speculated that digital technology could lead to decentralised banking by stating: “The successors to Bill Gates would have put the successors to Alan Greenspan out of business” (King, 1999, p. 28). In his opening paragraph, King asks, “Will central banks exist?”

I raised the same question regarding the World Bank when my Australian colleague and former client, James Wolfensohn, was its President (1995–2005). Nick Stern, who later became a Lord, was his chief economist at the time. The adviser to the chief economist was David Ellerman. I met Ellerman in Boston in 1979 when he was the Industrial Cooperative Association’s co-founder and staff economist. We shared a vision of self-reliant, self-financing, bottom-up economic development (Turnbull, 1983, 1986a, 1989, p. 159–166).

Wolfensohn chaired a meeting with Stern, Ellerman and me to ascertain if he should take my advice to change the business model of the World Bank. That was to stop colonising client countries with debt and instead educate them on self-financing with their local currency, as achieved by other leading economies. Ellerman (1982) had documented the institutional arrangements of how the Mondragon stakeholder-owned cooperatives had achieved this. I had used this as a case study in my just completed PhD. In 2006, Ellerman published a book on *Helping people to help themselves*.

However, the World Bank has still not changed its business model. This also illustrates the challenges in introducing logical improvement in the structure of financial institutions.

The 2009 Nobel Prize committee identified how Ostrom, a political scientist, introduced a new worldview to economists (Nobel Prize Outreach, 2025). They reported:

“It was long unanimously held among economists that natural resources that were collectively used by their users would be over-exploited and destroyed in the long-term. Elinor Ostrom disproved this idea by conducting field studies on how people in small, local communities manage shared natural resources, such as pastures, fishing waters and forests.”

An added irony was that Ostrom shared the prize with Oliver Williamson, who authored a book on “markets and hierarchies” (Williamson, 1975). Ostrom denied neither was relevant in her acceptance speech, whose title began “beyond markets or states”.

Hierarchies in organisations, whether in the private or public sector, represent centralised, top-down dictatorships. They are the antithesis of Ostrom’s user-governed bottom-up distributed decision-making ‘polycentric’ networks. Another example of how economists are blind to reality is provided by Thomas Picketty (2017). He reported (Picketty, 2017, p. 353) that “through most of human history, the inescapable fact is that the rate of return on capital was always at least 10 to 20 times greater the rate of growth output (and income)”. He could not explain how this arose because accounting doctrines do not require investor time horizons to be reported. This denies economists the ability to detect the extent to of surplus cash can be received for many years beyond an investor’s time horizon (Turnbull, 2000a; 2021).

Establishing a tether

One current model of a monetary tether is the Big Mac index. It was invented by *The Economist* in 1986 as a light-hearted guide to whether currencies are at their ‘correct’ level. It is based on the theory of purchasing-power parity (PPP), the notion that in the long run, exchange rates should move towards the rate that would equalise the prices of an identical basket of goods and services (in this case, a burger) in any two countries. The Big Mac index has become a global standard, included in several economic textbooks and the subject of dozens of academic studies. Its credibility is based on McDonald’s hamburgers, using an identical basket of commodities in each nation (*The Economist*, 2024).

A sustainability index would vary in each monetary area according to the extent to which all consumption was from everlasting renewable or recyclable sources from within the region or imported, without losing biodiversity. Such an index could take years to develop and refine.

However, a simplistic single commodity index for each nation could be established quickly. This could be achieved more quickly than it could become seriously accepted to counter climate change. Its primary purpose would be to educate the public on how it could work during the time required to establish more rigorous, detailed and bio-regional-specific indexes.

A critical component of any sustainability index would be the degree to which all energy consumed in a region was from renewable sources within the region or imported. This data is already available in most jurisdictions around the world. Consider using this data type for each state or territory in Australia. The Australian Government Department

of Climate Change, Energy and the Environment⁶ has published the energy mix by sources and territory for 2022 to 2023, as shown in Table 2.

The 'Renewables' bottom line in Table 2 would represent the sustainability index of each local currency in each region. This means that the Tasmanian dollar with a 44.1 index would be worth at least four times the money used in NSW, Victoria or Queensland. This disparity arises because Tasmania is one of the first regions in the world to obtain all its electrical power generation from renewable energy sources. Some of it is exported by an undersea cable to the mainland to make Tasmania a battery for Australia (Tasmanian Government, 2025).

Similar data is available for each state in the US, provinces in Canada and the 27 countries in the EU. They possess additional sources of energy like nuclear and biomass. However, this incomplete, simplistic way of establishing sustainability indexes would become highly educational, like the Big Mac Index.

Even just the publication of exchange rates between prospective lifeboat currency regions could begin to make fundamental changes as to where to locate significant production facilities that have an operating life of more than 20 years.

As such allocations were made, the components of a simple index could be refined to include other elements like scarce metals and biodiversity. Likewise, the currency areas could become refined based on bioregions rather than nation-states.

The mere publication of sustainability index exchange rates could reinforce the capacity of the index to improve the rigour by which individual corporations can enhance their environmental, social and governance (ESG) reporting, even if this was initially limited to changes in their consumption and production of renewable energies.

Because of the exceptionally superior performance in Tasmania, Table 2 indicates extreme variations in sustainability index values within a single nation. It reveals the extent of the adjustments required to get more feet off the accelerator on a highway to climate hell. This will leave time to develop additional sustainability metrics. It also means that the sooner someone publishes simple metrics of benign renewable energy self-sufficiency, the better.

Hopefully, this article can act as a catalyst for someone somewhere to take global leadership in reducing the ghastly future expected for humans and their biodiversity support system that does not exist on any other planet.

TABLE 2. Energy mix by sources and territory (2022–2023)

	NSW	VIC	QLD	WA	SA	TAS	NT	AUS
Coal	37.1	33.4	32.3	7.7	7.5	8.9	0.0	25.9
Oil	43.7	39.1	36.6	34.6	49.2	39.7	28.2	38.9
Gas	9.5	18.1	19.9	54.5	25.4	7.3	70.4	25.8
Renewables	9.8	9.4	11.1	3.3	18.0	44.1	1.3	9.4

6. <https://www.energy.gov.au/energy-data/australian-energy-statistics/data-charts/australian-energy-mix-state-and-territory-2022-23>

Concluding comments

This article is part of a wider vision for reforming capitalism to become consistent with the self-managing, self-regulating and self-governing processes in all living things (Turnbull, 2018a; 2018b; 2018c).

A framework for this vision originated in the 1975 book *Democratising the Wealth of Nations* (Turnbull, 1975). The vision depended upon introducing ecological property rights that follow the practices of nature. This means replacing property rights that are static, exclusive and perpetual with dynamic, inclusive and time-limited rights for land, buildings, corporations and money.

Lifeboat money introduces an ecological form of currency. Ecological ownership of land and buildings can be achieved with community land banks. These can halve the cost of first home ownership by eliminating the cost of land owned collectively (Turnbull, 1983; 2017). Ecological corporations could be introduced with an “Investor-led tax incentive to create a stakeholder economy” (Turnbull, 2021). This also introduces distributed decision making, described by Ostrom as “polycentric” self-governance (Ostrom, 2009).

A supporting theoretical framework was developed based on identifying “surplus profits” (Turnbull, 2000a, p. 2) that accounting doctrines cannot report. I also used my PhD research (Turnbull, 2000b) to develop “The Science of Corporate Governance” (Turnbull, 2002) and “The Science of Governance” (Turnbull, 2008) and introduced to social scientists the concept of “tensegrity” (Turnbull, 2022b). Tensegrity is a defining feature of self-governing systems and their autonomous, almost self-governing nested subsystems. These system science concepts provided a basis to extend the scholarship of Ostrom to a global context (Turnbull, 2024c) for organisations and so complement the agenda of this article.

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