



Net Zero Communities (NZCom)

Work Package 5

M5.1 Establishing socioeconomic outcomes of community business models

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1 Introduction

1.1 Background

Project VENICE (Vulnerability and Energy Networks, Identification and Consumption Evaluation) is a Western Power Distribution (WPD) programme funded under the 2020 Network Innovation Allowance (NIA) call: 'Energy Transition: Leaving no one behind'. This comprises three related projects, one of which is the Net Zero Communities (NZCom) project.

The NZCom project is using the Wadebridge & Padstow Community Network Area in Cornwall as the focus of its activities and research. The Network Area is defined as the cluster of 13 Lower Super Output Areas in and surrounding Wadebridge and Padstow, and the three Cornwall Council electoral divisions that cover this area.

NZCom is looking to gain understanding about how the needs of WPD's vulnerable customers (domestic and non-domestic) will change in the future, creating new pathways to support a whole community through the transition to net zero. As part of exploring the nature of this transition, the positive role that community energy groups can play will be considered.

The purpose of Work Package 5 of NZCom is to translate the findings of Work Packages 2-4 into business propositions that community led and community owned initiatives can take forward. It will consider the range of technical options developed within Work Package 4 and identify approaches that will allow appropriate business plans and investment strategies to be adopted.

1.2 Purpose of this document

The aim of this paper is to establish what socioeconomic outcomes and benefits could be achieved from the community business models produced as part of this work package. These outcomes will be shaped by the broader objective of assisting the engaged community to make progress along the pathways to achieving net zero, and to support Western Power Distribution's stated aim that "no-one is left behind".

2 Frameworks to shape socioeconomic outcomes

2.1 Achieving sustainable outcomes

Based on the work of the Brundtland Commission, in 1987 the United Nations published **Our Common Future**, that established the three pillars of sustainability that are now widely recognised as the key themes for sustainable development¹. The three pillars focus attention on outcomes that are social, environmental and economic. The pillars are now also regularly represented as People, Planet and Profit.

¹ United Nations, 1987, Our Common Future, accessed at <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>

See also IUCN, World Conservation Congress, 2005, The IUCN programme 2005-2008: many voices, one earth Accessed at <https://portals.iucn.org/library/node/8600>

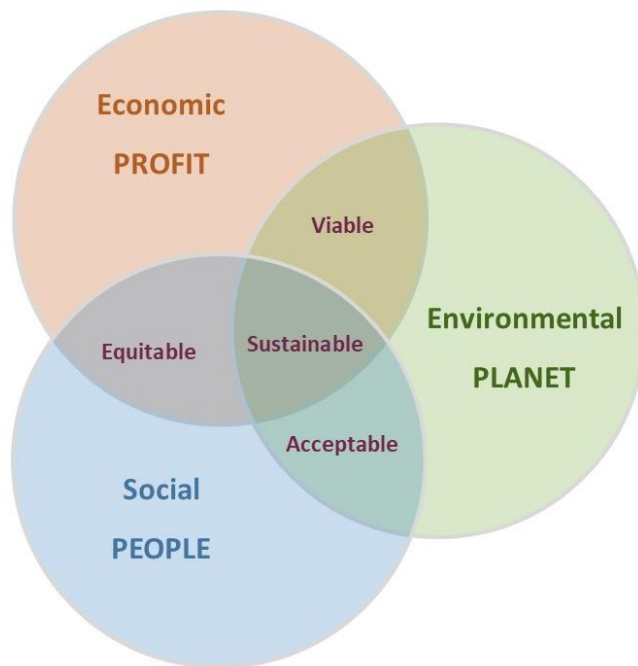


Figure 1: The three pillars of sustainable development

As Figure 1 illustrates the interactions between each pillar prompt questions and challenges about how sustainable outcomes and returns can be achieved. Modelling in this way can also consider any unintended consequences of development proposals; while the answers to these questions will be subjective and dependent on a range of factors influencing the decision process, they potentially provide a more holistic, sustainable outcome.

When considering the weighting and prioritisation of pillars within a proposal:

Between People and Planet – what should be considered **Acceptable** outcomes?

Between Planet and Profit – what are **Viable** outcomes?

Between People and Profit – what are **Equitable** outcomes?

2.2 Using the Doughnut

Kate Raworth is Senior Associate at Oxford University's Environmental Change Institute and an innovative economist who is known for promoting the concept of 'doughnut economics', an economic model that looks at the balances between essential human needs and planetary boundaries.² The model develops the sustainable development concepts used to create the UN's Sustainable Development Goals and can be used to understand and direct outcomes seeking to achieve positive community benefit.

² Raworth, Kate (2017). Random House, *Doughnut Economics: Seven Ways to Think Like a 21st Century Economist*

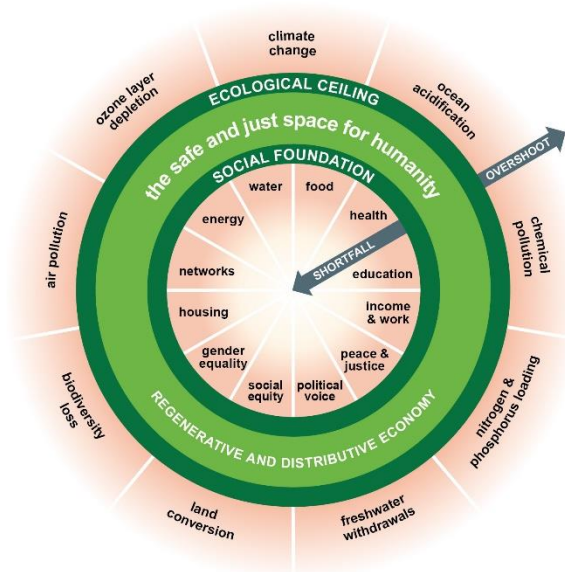


Figure 2: The Doughnut - all our activities must be constrained by the Ecological Ceiling, defined as the finite boundaries of the planet's resources, but also take into account the Social Foundation, ensuring that no-one is left behind³

"The Doughnut consists of two concentric rings: a social foundation, to ensure that no one is left falling short on life's essentials, and an ecological ceiling, to ensure that humanity does not collectively overshoot the planetary boundaries that protect Earth's life-supporting systems. Between these two sets of boundaries lies a doughnut-shaped space that is both ecologically safe and socially just: a space in which humanity can thrive."⁴

The twelve elements making up the Social Foundation are:

- Food security
- Health
- Education
- Income and work (the latter is not limited to compensated employment but also includes things such as housekeeping)
- Peace and justice
- Political voice
- Social equity
- Gender equality
- Housing
- Networks
- Energy
- Water

The nine planetary boundaries that form the Ecological Ceiling draw from the work of a group of Earth-system scientists led by Johan Rockström and Will Steffen.

³ Image By Doughnut Economics - Own work, CC BY-SA 4.0, <https://commons.wikimedia.org/w/index.php?curid=75695171>

⁴ <https://doughnuteconomics.org/about-doughnut-economics>

- Climate change
- Ocean acidification
- Chemical pollution
- Nitrogen and phosphorus loading
- Freshwater withdrawals
- Land conversion
- Biodiversity loss
- Air pollution
- Ozone layer depletion

More information about how the Doughnut Economics model is used and applied to developing action plans can be found at the Doughnut Economics Action Lab website:

<https://doughnuteconomics.org/>

These two frameworks, the three pillars of sustainability and the Doughnut model, can help provide a structure to consider and evaluate the outcomes from the business planning generated by WP5 and the NZCom project overall.

2.3 Community businesses

Consideration also needs to be given to how the proposed business models will be used by the community businesses that could utilise them. It is therefore important to establish what is defined as a community business and who will benefit from their activity.

Will the primary beneficiaries of the activity be the households and local businesses that directly participate in the delivery of the proposals? Are wider community outcomes also feasible and how will they be delivered and measured for effectiveness? For community businesses, who leads and controls the structure, who decides and awards the benefits of any outcomes, and who controls decisions about expansion and reinvestment will all influence the structure of the organisation. These questions will be addressed in section 6.

3. Social Outcomes

Social returns from the business proposals that will be developed as part of NZCom will emerge as the plans are rolled out, but we anticipate that they will promote **community cohesion** and **resilience**. Although not fully recognised yet, the significant disruption to lifestyles that decarbonising energy, in terms of the generation and supply of electricity, the way domestic heating is provided and the transport we use, will need to be addressed. The potential of a community thinking about these issues and working on the solutions will bring people together. The track record of community energy projects across Cornwall has shown that **volunteering** opportunities, **skills development** and the chance for **inter-generational collaboration** are all direct outcomes from these projects.

Engagement on the broad range of topics that address the transition to low carbon lifestyles will contribute to **communal wellbeing and health**. It has already been recognised by mental health practitioners that fears and anxieties about the impacts of the Climate Emergency and Ecological Catastrophe underway, can be addressed through cooperative activities in communities. The Climate Café model developed by the Climate Psychology Alliance is one approach to this challenge (<https://climatepsychologyalliance.org/>), but practical projects are also invaluable. Bringing people together to discuss and plan actions is a proven means to tackle **social isolation** and the fragmentation of communities.

The resilience of local communities in the face of these unprecedented challenges, in the context of the way local services have been defunded and reduced over the past decade of austerity has shifted attention to the concept of **Community Wealth Building**. An objective of the benefits emerging from the business models will be to strengthen the **capacity of the community** by building connections across the Community Network Area and further afield, working with new and established partners to ensure no-one is missed and that they have the opportunity to make meaningful contributions, i.e., engagement that goes deeper than the too typical “community consultation”. **Participatory decision-making, transparent governance structures and a clear local focus** (i.e., this is an issue “for me and my neighbours”) are all key elements to consider.

Looking at the 12 Social Foundations in the Doughnut, the above points can influence several of these outcomes, but one particularly should be noted: **Education**. The term used here is not necessarily addressing formal education and work with schools and FE and HE institutions; rather it is a broader concept and connects with learning from the NZCom community engagement and focus groups. A clear request for **information, advice and guidance** about a range of technologies has come from this work, and it is imperative that a primary outcome of the community business activity is a focus on further **educating** this community about the challenges it faces and the opportunities available. On-going engagement and learning opportunities will need to be embedded as part of any operational plans.

4. Environmental Outcomes

The environmental returns from community business activities are potentially numerous. Underpinning the concept of a transition to a **net zero carbon target** is the potential to limit the Carbon Dioxide equivalent emissions (CO₂e) of the Community Network Area. A shift from a reliance on burning fossil fuels in the locality will also contribute to the wider national targets.

Thought can also be given to improved **Air Quality**, particularly with a transition away from dependencies on petrol and diesel for transport. Although a predominately rural community, the main community clusters of Wadebridge and Padstow will see the effect of reductions in air pollution from the use of cleaner transport; these communities already have invested significantly in the promotion of cycling as a result of the Camel Trail running between the two main population centres along the Camel estuary and there is potential for further expansion that could be supported with benefit funds generated from the NZCom proposals. Additionally, the opportunity to shift domestic heating to low carbon technologies will have an impact on indoor air quality, contributing to improved health outcomes., e.g. reduced incidence of asthma trigger events.

Benefits will be derived from outcomes that increase the independence of local energy generating capacity. Spill-over effects of some of the technical solutions being developed in Work Package 4 have the potential to strengthen the local area’s **resilience** with regard to grid supplied electricity, a subject of particular concern in Cornwall, at the end of the national grid network.

Through the modelling carried out in Work Package 4, identifying housing types and developing proposals to see energy efficiency retrofits carried out, that will raise the Energy Performance (EPC) scores of properties, will lead to reduced energy demand and consequently reduced CO₂e emissions.

The potential benefits of these community activities will contribute both the outer ring of the Doughnut: **Climate Change** (taken as synonymous with CO₂e reduction) and **Air Pollution**, and on the inner ring **Health** and **Housing**.

5. Economic Outcomes

At a time of austerity and financial pressure, the opportunity to invest in renewables and energy efficiency schemes will represent a real opportunity for local economic growth. Promotion of renewable projects in the network area will have a local economic footprint; however, this should be done carefully as there are numerous large-scale renewable generation sites in this locality where the capital investment came from outside Cornwall and very limited financial gains in the area are evident, with most of the returns going back to the investors. The proposals could unlock **employment** opportunities and **workforce development, training and skills** in the clean energy sector. **Income generation** from the new business ventures will contribute to the local economy, as well as releasing other monies by lowering the cost of fuel bills for participating households. Some discussion has already taken place about proposals being developed in Work Package 4 which may include opportunities for **tiered pricing structures**, to introduce the principle of a **financially equitable structure** to the business plans.

Given that a principle outcome of this work is to identify barriers that could prevent vulnerable households from making the transition to the net zero/low carbon economy, the economic outcomes of any plans need to keep this challenge in mind. Although not all vulnerable households will be classed as such for economic reasons, it will be the case that many households that have fixed or low incomes are likely to be more vulnerable. Accordingly the business plans will be developed with this group in mind, and will attempt to be **inclusive** and mindful of the challenges these households face.

A key principle that will be developed as business planning is carried out is to ensure as many local people as possible could have a stake in the business. This will be dependent on the legal structures that are adopted; where **community shares** are used to provide part of the start-up finance required, minimum investment levels can be set to encourage participation. Both Community Power Cornwall and Egni Co-op in Wales have launched share offers with a minimum investment of £50⁵; **crowd funding** opportunities will also be considered which seek to widen the scope of investors and provide an equitable return.

Community energy groups in Cornwall have a strong track record of directing benefit funds into the local economy and supporting community ventures. **Community benefit funds** using surpluses generated from business activities can be targeted to support other related activities in the community and also to provide benefit to residents who are unable to participate in share investment opportunities. This means that **local priorities** can also be supported. For examples, see Section 8. Modelling that can track the financial benefits within the community can also be done, i.e., through using the Local Multiplier 3 (LM3) model developed by the New Economics Foundation or similar.⁶ If the business proposals are proven, this approach could also contribute to a reduction

⁵ <http://communitypowercornwall.coop/joining-and-apply-for-shares/current-share-holding-opportunities/>
[https://egni.coop/wp-content/uploads/2019/05/EGNIShareOfferDoc.ENG .pdf](https://egni.coop/wp-content/uploads/2019/05/EGNIShareOfferDoc.ENG.pdf)

⁶ <https://www.nefconsulting.com/what-we-do/evaluation-impact-assessment/local-multiplier-3/>

in **grant dependency** for local voluntary and charitable organisations, an issue which continues to be an area of concern for both grant recipients and donors.

6. Fuel poverty

Projects that promote the uptake of renewables and low carbon technologies often make reference to addressing and reducing the impacts of fuel poverty. In practice this does not translate into actual practice as often as intended. Tackling fuel poverty and wider poverty issues can be difficult to address given the complex reasons why households can be at risk; equally, it can be argued that successfully addressing the issue will have an impact on all three sustainable development outcomes, and several of the Social Foundation elements in the Doughnut.

Access to affordable warmth continues to be a significant challenge, especially for households that are not connected to the mains gas network (approximately 45-48% in Cornwall); equally the affordability of food, means that work to address fuel poverty also often must widen its scope to include tackling food poverty (the Heat or Eat dilemma) and also water bill debt.

Fuel poor homes often live in properties that are the least thermally efficient with low EPC scores, and they can also be those that use more carbon intensive fuels. Distressingly, the number of homes that continue to use coal and manufactured solid fuels (MSF) have remained constant over the last decade, and so we will plan to target support actions towards these households as part of any business outcomes. Clearly, there are immediate wins to be gained to prioritise properties using coal, MSF and heating oil, and if we can direct efforts on those in or at risk of fuel poverty, we will generate multiple benefits.

As part of the NZCom partnership, Community Energy Plus will continue to promote the benefits of the Priority Services Registers for WPD and other energy suppliers. Using the definitions of vulnerability that underpin the Registers will help us refine business plan targets and gain additional benefits for these households.

7. Community business structures

There are many different legal structures that community led businesses can use. Among them are (not an exclusive list): Registered Charity, Charitable Incorporated Organisation, Community Interest Company, Community Benefit Society, and various types of Co-operative societies. Also, for some community business proposals, taking opportunities to enter Joint Ventures with Limited Companies and options to take shares in commercial ventures can be considered.

At this stage this paper won't be prescriptive on recommending specific legal structures, as this will form part of the modelling and development of proposals.

However, it is worth noting that some of the benefits of likely outcomes relate to the degree of involvement and the control of decision-making by local residents afforded by different structures. Transparency of governance is a key tool to enable residents see that decisions are being made in their best interests and not imposed on the community.

Increasing participation and engagement in the operation of a community business also needs to recognise that different groups of energy consumers exist within the community and that some groups will find it easier to engage than others. Therefore, choosing structures that encourage inclusivity and that are designed from the outset to widen community involvement of all aspects of the proposed plans, will enable this outcome.

While a range of options are available for appropriate governance, selecting that structure will be dependent on being clear on the priority of outcomes required. For example, if community buy-in through participating in the purchase of community share offers is desired, only some of the above structures will permit this type of investment. These decisions will also be guided by the level of, and type of initial capital investment required.

If an active membership is wanted over the whole length of the business plan (potentially in excess of 20 years), recruitment of new members has to be considered to replace the founding members, and again some structures are more flexible in regard this than others.

Two key sources of information to guide this process are the Co-op's legal team and The Community Shares Handbook:

<https://www.uk.coop/start-new-co-op/support/community-shares>

<https://www.uk.coop/resources/community-shares-handbook>

Social enterprises that trade with the aim of reinvesting surpluses in community focussed outcomes maybe preferable where the selling of energy from community-owned assets via an Energy Services Company (ESCO) is the primary business activity. Also, for example, for EV car-pooling schemes, EV charging options or similar proposals, the management of customers and billing of operations will be factors that shape the decisions about appropriate business structures.

8. Wadebridge Renewable Energy Network (WREN)

8.1 A local example

The Wadebridge Renewable Network (WREN) are the lead partner on the NZCom project and have been working to promote community-led renewable energy development in the locality for more than a decade. It has played a leading role in Cornwall's community energy landscape seeking to achieve benefits for its local community.

WREN is a Registered Society on the Mutuels Register, identified as member-led organisation whose stated aim is:

to inform and educate on environmental and sustainability issues. This can include projects about energy, water, soil, river and ocean, biodiversity, pollution, transport, climate change, food, recycling, the natural environment, wildlife'

8.2 Community Benefit funds

WREN administer a range of community benefit funds that have been made available as a result of Section 106 agreements with the Local Planning Authority and the developers of renewable energy

projects. Two examples illustrate how the terms of reference for these funds can align with the discussion above.

- **St Breock Windfarm Community Benefit Fund**

Priority projects are those concerned with either energy conservation, the installation of renewable energy generation, and / or renewable energy related education initiatives

- **Middle Treworder Community Fund**

Any charitable purpose

- focussing on grass roots community and voluntary groups and individuals
- local children's groups / young people's schemes / local youth projects
- households in fuel poverty or at risk of fuel poverty, support projects and services for households in or at risk of fuel poverty
- low carbon initiatives
- climate change mitigation or adaptation

Monies are only granted to not for profit (non-commercial) organisations and groups and projects must be for the benefit of people living in at least one of the 4 eligible parishes of Wadebridge, St Kew, St Mabyn and Egloshayle.

Applications to this fund

- Should represent value for money
- Should provide services or opportunities for disadvantaged people and / or enhance the social, cultural or community life of the area

8.3 Wadebridge Energy Company

WREN established Wadebridge Energy Limited, trading as Wadebridge Energy Company (WEC) to hold electricity generation assets in pursuance of WREN's aims and to enable the benefits of renewable generation, both domestic and community scale, to be retained locally.

The company is underpinned by the following fundamental purposes:

- Build community and energy resilience
- Increase community-owned renewable energy
- Reduce the number of residents in fuel poverty
- Retain the financial benefit locally
- Contribute to the alleviation of climate change

WEC is also a registered society and is a separate entity to WREN. The two companies have no shareholding relationship but have three directors in common.

8.4 Community Power Cornwall/The Energy Society

As an alternative model that has generated community benefits for a small parish elsewhere in Cornwall, The Energy Society, an offshoot of Community Power Cornwall holds a 25% stake in an EWT wind turbine located near Launceston. The agreement with the commercial developer provides annually a £10,000 benefit fund, that any organisation or group within the parish where the turbine is sited can apply for. The fund to date has enabled significant improvements to the village hall and proposals for extending and improving local footpaths have been developed. In addition to the benefit fund, a further £10,000 is available annually to support community capacity building; this fund was established recognising that often the volunteers responsible for the management of community assets need extra help to develop proposals and sometimes the proposals are unable to make progress due to lack of development capacity. If the funding isn't accessed in the year, it can then be rolled into the main benefit fund.

9. Conclusions

The aim of this paper has been to consider the possible socioeconomic outcomes that can be achieved from the community business models produced by the NZCom project. These outcomes will be shaped by the broader objective of assisting the whole community to make progress along the pathways to achieving net zero, and to support Western Power Distribution's stated aim that "no-one is left behind".

The guiding principles of the Wadebridge Energy Company provide a solid underpinning for the objectives of any new projects; aligning these outcomes against WEC's objectives will allow additional benefits given the shared common purpose. However, they are also applicable to any setting where community led development is proposed:

- Build community and energy resilience
- Increase community-owned renewable energy
- Reduce the number of residents in fuel poverty
- Retain the financial benefit locally
- Contribute to the alleviation of climate change

Using these objectives as a foundation it is hoped that the following measurable outcomes can be achieved:

- An increase in the levels of positive participation in decision making about local, low carbon investments
- Recognising the variability of consumer segments across the community, participation and engagement will be tracked in terms of demographics, geographic spread, household income levels and household types and tenures.
- Economic benefits for local householders from participation in schemes promoted by the business activities, specifically reduced energy bill costs, and improved levels of thermal comfort
- Community wealth generation through surpluses created by new business ventures, including job creation and skills development.
- A portfolio of solutions that are financially accessible to the resident population, promoting equity and inclusivity

- Increased awareness of the challenges and opportunities that the transition to net zero will create; educational activities to provide advice, information and guidance across the network area.