Government of Jersey
Future Economy Programme

Work Package 2: Policy development support
WP 2.2.2: Distributional impact analysis for the Carbon Neutral Roadmap

## Applying Principle 5: Ensuring a just transition to a carbon neutral Jersey:

# Distributional impacts of Jersey's Carbon Neutral Roadmap

**Final report**

**March 2022**

pwc

# Contents

# Executive summary

## A just transition for Jersey

Jersey's journey to carbon neutrality will affect different islanders in different ways. Principle 5 of the Government of Jersey's Carbon Neutral Strategy states that, *"We will make sure that carbon neutrality policies do not overall increase income inequality. The impacts of all carbon neutral policy options will be assessed to ensure a just transition to carbon neutrality"*.

There is significant financial inequality in Jersey. Inequality of wealth is more pronounced than in the UK, due in large part to the growth in property prices and the stock market benefiting those with pre-existing wealth. In addition, the mean income in Jersey is higher than the median income, and greater than in the UK, indicating that the distribution of income is unequal. There is also a significant gap between the consumption of low income and high income families. Low earning households consume, on average, 3.2 times less than high income households. 19% of all households reported financial struggles in 2018, with 44% of single parent families reporting financial hardship. The recent pandemic and inflation has served to further exacerbate these challenges for many islanders, particularly those working in sectors that have been adversely affected.

In the context of the global transformation to net zero, the concept of a *"just transition"* in which no societal group bears a disportionate burden of the costs, and in which the benefits of a zero carbon and resilient economy are shared fairly, is critical. A significant proportion of emissions are subject to personal choices about how we move, buy, eat, and heat our homes: if the transition is perceived as unfair, it will be much harder to change behaviours.

**Jersey is right to include Principle 5 in the Carbon Neutral Strategy; the challenge now is how to apply it in practice.**

**This report sets out how the policies in the Carbon Neutral Roadmap have been tested against Principle 5. It analyses the impacts of the proposed policies on different islanders, recommends actions that could address any adverse impacts, and considers whether, overall, the Carbon Neutral Roadmap (consultation version) is duly aligned with Principle 5.**

## Approach to analysis

*"Distributional impact analysis"* is a term used by economists to describe the assessment of the impact of interventions on different groups in society. Interventions may have different effects on individuals according to their characteristics, such as income level or geographic location. These could be intended or unintended consequences of pursuing a particular policy direction. The resulting impact on inequality could be either positive (progressive) or negative (regressive).

As part of PwC's work on the Government of Jersey's Future Economy Programme, we developed a Multi-Criteria Analysis (MCA) framework to assess potential carbon neutrality policies against a full range of economic, social, environmental and deliverability criteria. These results were used to aid policymakers in the development of the Carbon Neutral Roadmap.

The MCA results were also the starting point for more in-depth analysis specifically with regard to Principle 5. We extracted the criteria most directly associated with a just transition and, using these, found that the following 8 policies are most likely to have an impact on Principle 5:

| | |
|---|---|
| **Transport policies** | |
| **TR1** | Speeding up adoption of electric vehicles |
| **TR2** | Vehicle scrappage incentive |
| **TR3** | Supporting transition fuels |
| **TR4** | Vehicle emissions duty incentive |
| **TR5** | End the importation and registration of petrol and diesel vehicles that are new to the Island from 2030 |
| **Heating policies** | |
| **HT1** | Supporting low carbon heating systems and home insulation |
| **HT3** | Energy Performance Certificates |
| **Enabling policies** | |

| | |
|---|---|
| **EN3** | Developing supply chains and on-island skills for a sustainable economy |

For each of these 8 policies, in this report we have analysed the likely distributional impacts, and set out possible mitigating actions where appropriate.

It is important to emphasise:

- An exhaustive quantitative analysis of the distributional impacts of each policy has not been undertaken due to lack of available data in Jersey. Impacts have been assessed on a best endeavours basis given available data, plus insight from distributional analyses in other places. We also set out recommendations to improve the data..
- Within the scope of this report, we have set our recommended mitigating actions at a high level only, based on our analysis and experience from elsewhere. These are intended as a starting point and will need further consideration and development by the government.

## Distributional impact analysis of transport policies

The Carbon Neutral Roadmap's transport policies aim to support the shift to a low-carbon mobility network, through disincentivising petrol and diesel (Internal Combustion Engine, or "ICE") vehicles and the use of replacement fuels in the short term, followed by the uptake of electric vehicles (EVs) in the medium to longer term.

In the absence of means testing, we found these policies will broadly benefit middle and higher income earners, whilst negatively impacting those groups unable to afford the newer, more expensive, green alternatives even with the grants proposed.

Lower income and marginalised groups who are highly reliant on cheap transport will need to be supported through the transition by targeted access to finance, a credible and effective public transport system, and a considered approach to the electric vehicle infrastructure. Further support for active travel, and for Mobility-as-a-Service (MaaS) innovations, is also key.

## Distributional impact analysis of heating policies

Heating policies will provide subsidies for low-carbon heating systems and home insulation in the short term, and create a minimum standard of energy efficiency in homes and commercial properties in the medium term.

A greater proportion of lower income groups are resident in rental properties subject to ownership decisions made by landlords. These landlords may not have sufficient incentives to make the necessary upgrades, or may pass on the costs of new systems to tenants which could result in disadvantage for lower income groups even as the cost of heating may marginally fall. It is unlikely that tenants will independently purchase new heating systems due to the short duration of their expected stay.

Landlords should be incentivised to invest in their properties through appropriate access to financial subsidies and targeted support provided to lower income households to prevent the cost of upgrades to heating systems being borne by those least able to afford it.

## Distributional impact analysis of policies growing skills and supply chains for the net zero economy

The opportunity for green job creation is significant globally and there is every reason to believe this will also hold true in Jersey. Green jobs can either directly support the transition, or provide supporting services, including the sustainable finance industry. More broadly, it is clear from wider work under the Future Economy Programme and elsewhere that upskilling Jersey's workforce is key to Jersey's future economy. Government can take action to boost both supply and demand for green jobs through training programmes and other measures, and there is much work ongoing in Jersey upon which this can be built. A significant behavioural shift will also be needed to bring the population along with the changes required and ensure buy in.

It is premature to analyse the distributional impacts of government intervention in this area because this CNR policy is only a broad aspiration at this stage. However, we can say that it will be essential that any government investment in green skills includes supporting those working in "sunset" jobs that could otherwise be adversely affected (e.g. parts of the energy supply, distribution and maintenance industry, parts of the construction industry, parts of the on-island transport industry).

With regards to growing green supply chains, again it is hard at this point to pinpoint specific distributional impacts because the policy is very broad at this stage. We can say that it will be important to consult both industry and consumers locally, and think carefully about how to optimise the wider social benefits of on-island supply chains. We know from our wider Future Economy Programme work that some sectors in Jersey spend relatively more of their total revenue on local goods and services than others, meaning that spending in one sector can create many more jobs in the economy than the same amount of spending in another sector. Any potential future policy options, such as selective import tariffs to reduce reliance on off-island carbon intensive goods, should be carefully considered to avoid a detrimental effect on lower income groups. Government could explore on-island supply chains to locally develop select industries.

## Conclusions

**This distributional impact analysis of the Carbon Neutral Roadmap has identified potential challenges to progress in line with Principle 5.**

**Taken individually, the eight policies which have been assessed do have significant potential distributional impacts, in particular for lower income households, due to the nature of the changes which will be required to meet the Carbon Neutral Roadmap targets.**

Local infrastructure and transportation networks will need to provide a basic level of utility to an increasing user base as lower income groups seek transportation alternatives.

Access to financial support may not be sufficient to offset the green premium, or the excess cost of green alternatives, and the government should therefore selectively support low income groups to ensure they are not left behind.

Government action will need to be measured and carefully evaluated, using appropriate data, to avoid an increase in the cost of living which will disproportionately impact those least able to absorb them. Monitoring and evaluation of actual policy impacts will be required to adjust action accordingly.

**The Government of Jersey should be under no illusion that considerable government intervention, safeguarding and transition support will be required to avoid the most significant adverse distributional impacts.**

This is certainly possible, but will not be easy, in particular given the current baseline state of financial inequality in Jersey. In addition to the specific policies and mitigations suggested in this report, it will require a mindset shift for the government and the island as a whole. It will require innovation, smart and creative strategy, joined-up thinking, new collaborations and partnerships, robust monitoring, and community participation and engagement. This will likely carry public cost, but is critical to shifting the hearts and minds of the entire island to achieve the CNR goals.

Jersey has the sovereign policy levers to make a difference, a wealthy society overall in global terms, and sees itself as a testbed for innovation. If a just transition can't be achieved in Jersey, then where?

**We hope this report initiates real momentum to ensure that everyone in Jersey can share in the benefits of the island's transition to a low carbon economy.**

### Where to find our recommendations for strengthening application of Principle 5

**Key considerations** can be found on **page 17**.

Transport policies
- Recommendations including **finance**, **EV infrastructure**, **public and active transport** on **page 19**.
- Key messages arising for **TR8: Sustainable Transport Roadmap** in Box 2 on **page 20**.
- **Specific recommendations for each** transport **policy** in Box 3 on **page 28**.

Heating policies
- Recommendations including a **focus on older homes**, **access to finance**, and **process** on **page 29**.
- **Specific recommendations for each** heating **policy** in Box 4 on **page 34**.

Enabling policies
- Recommendations across **imports, support for green jobs** and local **supply chains** from **page 38**.

**Recommendations for further work** can be found on **page 41**.

# Context for this work

## About this document

Jersey's journey to carbon neutrality will affect different islanders in different ways. It is therefore important to understand the potential consequences of proposed carbon neutral policies on inequality and fairness.

The Government of Jersey commissioned PwC, as Strategic Partner for the Future Economy Programme, to undertake a review to better understand these potential consequences and to inform the development of the Carbon Neutral Roadmap (CNR).

This document sets out the findings of that work. It is intended for all interested government, business and civil society stakeholders. It sets out:

- What distributional impact analysis is and how it informs whether the CNR is consistent with Principle 5 of the Carbon Neutral Strategy; and
- What we know about the distributional impacts of proposed policies within the Carbon Neutral Roadmap, and what, if any, measures could be implemented to mitigate these impacts.

## Principle 5 of Jersey's Carbon Neutral Strategy

Taking a global perspective, addressing climate change and achieving the goals of the Paris Climate Agreement requires transitioning to a net zero economy. While this is an essential task that can provide significant economic and social benefits, it can also pose significant challenges for countries and communities. Achieving a so-called "just transition" requires tackling the challenges faced by communities and workers as they shift toward sustainable livelihoods, while also ensuring that the benefits of the zero-carbon and resilient economy are shared fairly.

Jersey has placed the concept of a "just transition" at the heart of its approach to carbon neutrality. As set out in the *Preferred Strategy*, Principle 5 of the Government of Jersey's Carbon Neutral Strategy states that:

*"We will make sure that carbon neutrality policies do not overall increase income inequality. The impacts of all carbon neutral policy options will be assessed to ensure a Just Transition to carbon neutrality."*

It is therefore important that analysis used to prioritise, design and integrate policies for the CNR considers relevant socio-economic and political criteria, including the impact of policies on employment and how acceptable they might be to the public overall. That analysis plays a key role in identifying areas where policies might have more unjust impacts in order that, where such policies are supported, other steps might be taken to seek to mitigate those effects. This will therefore be an iterative process.

A "just transition" also requires that the interests of future generations are considered, and that they are not left either to live with the impacts of inaction now, or to bear a disproportionate burden of the costs to mitigate and adapt to climate change. Amongst other steps, the Carbon Neutral Strategy has been subject to an initial Childrens' Rights Impact Assessment as part of the draft CNR process, with a final assessment, and a Disability Impact Assessment, to be undertaken when policies are finalised.

## What are "distributional impacts"?

Distributional analysis is a term used to describe "*the assessment of the impact of interventions on different groups in society. Interventions may have different effects on individuals according to their characteristics (e.g. income level or geographical location). These effects could be a deliberate government objective or the unintended consequences of an intervention*"[1]

[1] HM Treasury, Green Book

Free markets can often lead to inequality, but governments can reduce this through tax and redistribution. As a result, different types of and levels of inequality exist in different societies. Most government interventions have a specific goal (e.g. healthcare, defence) but because these interventions typically provide resources to one group and/or levy taxes on another, such interventions will impact inequality in a positive (progressive) or negative (regressive) way. Where government interventions are small, this may be negligible, but where they lead to large-scale change in the real economy, such policies should be studied.

For example, over the last 50 years, the UK economy made a large-scale transition away from mining and manufacturing and into services, which now account for 80% of GDP. This transition took decades but left many people behind both in terms of jobs (e.g. miners, factory workers) and communities. Similarly, in Jersey, the transition away from traditional agricultural and tourism industries into financial services has not been without its challenges. The scale and pace of change needed to reach Jersey's carbon neutral target will require a similar shift, so it is crucial that policymakers know the potential impact of interventions, to ensure that this transition is just.

Distributional analysis of the CNR will show who is likely to win and lose financially from each proposed policy. Choices can then be made about whether to pursue the more regressive policies or whether to identify measures to help manage any adverse impacts on those least able to absorb them (e.g. alternative provisions, exemptions, subsidies).

That said, it is important to emphasise that quantitative distributional analysis, which puts numbers on the costs and benefits for different parts of Jersey's society, is not feasible due to lack of available data. This is a common problem; full quantitative distributional analysis has not yet been conducted on the UK's Net Zero Strategy for the same reason.[2] Impacts have therefore been assessed for Jersey on a best endeavours basis given available data, together with recommendations about how to improve data going forward.

## What do we know about potential distributional impacts in Jersey?

Various characteristics of individuals in Jersey may result in the effects of CNR policies being distributed unfairly. Principle 5, as drafted, focuses on income inequality, however it is important to recognise:

- Income inequality is not necessarily the only driver of financial inequality and unequal living standards.
- Many of the lowest income individuals may have other intersectional disadvantages that could further influence the distributional impact of CNR policies. These could include age (e.g. young people, older adults), gender, disability, ethnicity, geographical location. This report focuses on income inequality but seeks to also highlight these broader distributional impacts.

## An overview of inequality in Jersey

In this part of the report, we provide a brief overview of the current state of inequality in Jersey, based on available data. This is useful context for the sections that follow which explore the further distributional impacts of carbon neutrality policies on inequality in Jersey.

We have considered in turn:

- Financial inequality, including income, wealth and consumption
- Other population characteristics that could lead to an uneven distributional impact of the carbon neutrality policies

## Financial inequality

Financial inequalities are driven by many factors, including education outcomes, labour market conditions,

[2] There is significant uncertainty around the technology for meeting net zero, as well as around how the capital and operating costs of those technologies will evolve as those technologies are deployed. Equally the exposure to the costs of decarbonisation varies significantly depending on factors such as car or home ownership and lifestyle choices. These are not quantified to a level which will provide meaningful analysis. See chapter 3 HMT Net Zero Review.

sectoral mix of employment, asset appreciations, pension plans and more. For example, the UK's Department for Levelling Up, Housing and Communities appraises unequal living standards through its Index of Multiple Deprivation (IMD) to compare outcomes across areas. This index includes income, employment, education, health, crime, barriers to housing/services, and quality of living environment[3].

We have explored financial inequality in Jersey through three lenses:



**Income** **Wealth** **Consumption of goods and services**

Globally, wealth distribution tends to be more uneven than income, and differences in consumption expenditure tend to be smaller than both income and wealth inequality[4].

Each of these measures of financial inequality is helpful to consider how planned policy changes will impact different socioeconomic groups in Jersey[5]. The degree to which Jersey has inequality, in part, depends on how it is measured. Listed below are the main drivers of inequality in Jersey and their implications for the island. The most up to date data has been used for this review; however there are instances of data sets being particularly old (e.g. income inequality). These data challenges have been highlighted in our conclusion as an area for subsequent work.

**Table 1: Financial inequality in Jersey at a glance**

| **Income inequality** |
| --- |
| • In 2015, the bottom quintile (20%) of **households by annual equivalised income[6]** earned approximately £27,000 compared with £68,000 for the top quintile - these are presented in 2021 prices[7].<br>• Between 2010 and 2015 **income equality worsened**[8]. In 2010, the top 20% of households by income had annual earnings 2.4 times greater than the lowest 20%, increasing to 2.5 times in 2015[9].<br>• Income fell for the **bottom 20% of earners** by 1.3% between 2010 and 2015, whilst the highest earners saw earnings grow by 3.2%.<br>• The median full-time equivalent (FTE) salary for 2021 was approximately £32,600 per annum in Jersey[10], compared to a mean Jersey salary of £41,300[11]. This gives a **mean-to-median earnings** of 1.34 in Jersey, compared to 1.21 in the UK (2018)[12]. The higher mean value of income relative to the median value shows that the distribution of household income is unequal.<br>• Jersey's **living wage** is £10.96 per hour, compared to a £9.22 per hour **minimum wage**, which constitutes a £21,400 and £18,000 full time salary respectively[13]. Based on 2020 Class 1 Social |

[3] Defined as the quality of both indoor and outdoor living environment per the IMD
[4] Consumption and income inequality differ as households can borrow or save, so the amount of consumption in any period is not constrained to be equal to income in that period.
[5] In the past, income inequality was primarily driven by differences in wealth, but in recent decades focus has turned to the role of income from employment as the main driver of inequality.
[6] These household income figures are **equivalised**, and therefore takes account of the differences in a household's size and composition, Equivalised income is calculated by dividing the household's total income from all sources by its equivalent size, which is calculated by attributing a weight to all members of the household.
[7] Jersey Household Income Distribution 2014/15. In 2015 prices, this would be £23,000 per year for the bottom 20% of households by income, and £57,700 for the top quintile.
[8] Available via Earnings and income statistics.
The Jersey Gini Coefficient, which represents income inequality, is 0.34, compared with the UK at 0.35. The closer the figure is to zero, the more equal the society.
[9] Jersey Income Distribution Survey Report 2009/10 & Jersey Household Income Distribution report 2014 / 15
[10] Earnings and income statistics
[11] Earnings and income statistics
[12] Tag: Mean-to-median ratio
[13] Assuming a working week of between 35 and 40 hours.

Security contributions, there were approximately 16,500 employees in Jersey who earn less than £25,000 unequivalised[14] income per year in Jersey.

- Between 2001-2021 **average earnings** in Jersey remained essentially flat in real terms, increasing by 0.5% over the 20-year period[15].
- The average unequivalised weekly earnings for workers in **financial services** was £1,120 per week in 2021. This is over double the average weekly earnings for **hospitality workers** at £500 per week, even as the hospitality industry saw a 15.7% increase in earnings between 2020 and 2021 - recovering from the sharp fall in earnings in 2020.
- Approximately 7% of Class 1 Social Security contrebutees earned between £70,000 - £100,000 of unequivalised income, falling to 5.2% earning above £100,000.
- **70%** of employees in retail & hospitality earn less than £25k per annum (per 2020 data, unequivalised). Conversely, less than **20%** of employees in Public Administration and Financial Services earn less than £25k per annum[16].
- From 2010 to 2020 employment in the low wage sectors of agriculture, fishing, hospitality, and retail **fell by 1,570**, while employment in public services, digital, and health and education **grew by 3,990**.
- The **gender pay gap** was 21%[17] in 2021, despite women accounting for 50%[18] of the population and 49.5% of employees[19].
- As of 2019, 7,091 adults and 3,110 children under 16 were on income support and receiving payments[20].
- In 2020, 24.2% of Jersey students of compulsory school age were in receipt of the **Jersey Premium**, up from 22% in 2019[21].
- As of December 2021, the total number of individuals actively seeking work on a non-seasonally adjusted basis was 810 people. Of that total, 320 people had been registered for more than 12 months[22].

**Key messages arising:** There is clear income inequality in Jersey. A significant number of Islanders are financially insecure, making them poorly placed to manage any increases in the cost of living driven by the green transition.

A significant number of islanders are on relatively low incomes, or on income support, who will likely be least able to absorb any additional household costs as a result of Carbon Neutral Roadmap policies. An estimated 20% of households have equivalised income under £27,000 per-year; of which 8% of adults and 17% of children receive income support (2019).Those affected will in part depend on their individual living circumstance, as typically earnings disparities between households is lower than between individuals as a result of income pooling within households[23]. For this reason, particular consideration should be given to this group and how policies to accelerate Jersey's green transition will impact their financial security, whilst maximising possible welfare gains accrued to this group.

More broadly, it is also important to bear in mind that the low carbon transition has potential implications for job losses and job creation, as industry sectors shift and adapt to take advantage of new opportunities, whilst other technologies and services become obsolete. It will be important to ensure that any such trends do not further exacerbate income inequality, and that sufficient support is provided for those in the most vulnerable lower income jobs.

[14] This **unequivalised** income means that no adjustment has been made for whether the family unit contains more than one person. (Income is net of taxes and includes employment income, private pension income, benefit income (excluding housing benefit and council tax benefit), asset income and any other measure.
[15] 2021 Index of Average Earnings available here Index of Average Earnings
[16] Based on Class 1 2020 Social Security contributions
[17] Women in Work Index 2021 - PwC Channel Islands
[18] Annual population estimates by age and sex
[19] Based on Class 1 2020 Social Security contributions
[20] Social Security statistics
[21] Schools, pupils and their characteristics Academic year 2019/2020
[22] Registered Actively Seeking Work Fourth Quarter 2021
[23] Consumption Inequality and Family Labour Supply - American Economic Association

## Wealth inequality

- Individual **property ownership and private pensions** constitute a significant majority of wealth, accounting for 80% in the UK[24] (Jersey data unavailable but we assume similar).
- There is a direct relationship between salary and contribution to a **private pension**, indicating that a significant share of Jersey's net worth is tied to pension investments[25].
- **Property ownership** in Jersey is relatively low at 54%, compared to 63% for the UK nationally. Other places follow a similar pattern where property commands higher prices[26].
- The **average two bedroom house price** in Jersey has increased by 45% since 2011 to around £550,000 in Q4 2021[27]. This compares with an overall average house price (all sizes) of £520,000 in London, and £275,000 for the UK nationally as of Q4 2021[28].
- The **ratio of median house price to median gross household income** in Jersey is approximately 10.4 to 1. For a 1 bedroom flat it is 6.4 to 1, for a 2 bedroom flat it is 9.1 to 1, and 10.7 to 1 for a 3 bed house[29]. The equivalent ratio across all house types is 12.2 to 1 in London and 8 to 1 for England as a whole[30].
- The Jersey Housing Affordability Index (JHAI) is an indicator of whether a working household with an average (mean) income is able to purchase property affordably, based on several assumptions. The December 2021 figures show that housing affordability is continuing to decline, with all properties larger than 1 bedroom flats now out of reach from an affordability perspective for average working households on mean net income.[31]

**Key messages arising:** The concentration of wealth in Jersey would suggest that a significant share of Jersey's population do not have the financial resilience to temper significant financial shocks. Further, Jersey's existing wealth inequality is likely to continue as the population ages and residential rights limit broader property ownership. This is expected to make disparities in wealth more pronounced as the share of older people who own property and have stored wealth in savings/pensions grows *(i.e. a process of 'cumulative' inequality)*. Further, a prolonged period of low interest rates and successive years of growth in equities over the past decade would likely have embedded existing wealth disparities further.

Some of these differences in wealth may be magnified by Jersey's relatively high number of high earners and high-net-worths who typically have significant wealth stored in property, business assets and equities etc. This will skew the data slightly based on a small number of individuals. However, removing high-net-worths from the analysis would still present a situation of wealth inequality across the population.

Based on this, the distributional impact of the preferred policies should consider not only income inequality, but also how resilient islanders are to absorb any costs of those policies through stored wealth. For instance, there will be instances where Islanders are income poor, but asset rich and thereby better able to absorb additional costs through savings.

For this reason, particular consideration should be given to those in rented accommodation and islanders with minimal savings; as those with little stored wealth are poorly prepared to respond to possible increases in living costs driven by the green transition.

[24] The UK's 2020 wealth distribution available at https://www.resolutionfoundation.org/app/uploads/2020/12/The-UKs-wealth-distribution.pdf. For the purpose of this analysis, we assume a similar pattern applies in Jersey.
[25] Estimating government receipts and expenditure for Jersey households
[26] London 52%, Oxford 48%, Liverpool 51%, Glasgow 56%
[27] Jersey House Price Index
[28] UK House Price Index December 2021
[29] The **ratio of median house price to median income** in Jersey is 9.30 for a 1 bedroom flat, 13.40 for a 2 bedroom flat, and 20.81 for a 3 bed house. Based on a median property price of £295,000 for a 1 bed-flat, £425,000 for a two-bed flat, and £660,000 for a three-bed house.
[30] UK House Price Index summary: December 2021 - GOV.UK
[31] House Price Index Fourth Quarter - 2021.

## Consumption Inequality

- 19% of all households in Jersey struggle financially; this rises to 25% of **couples with children**, and 44% of islanders in **single parent households**[32].
- Consumption of goods and services differs between age groups. Those aged **45 to 55 spend the most**, with substantial variation between consumption categories.
- Consumption is lowest by those aged **16-34 and 65 and older**.
- Higher income households spend significantly more on **retirement programmes and insurance plans** than lower income households.
- In 2010, the highest earning 20% of households in Jersey consumed, on average, 3.4 times more per-week than the lowest 20% of earners. By 2015 this figure dropped to 3.2.
- Over the same period, the bottom 20% was consuming 6.1% more whilst the highest earners consumption grew by 2.1%.
- The Jersey house price index has outpaced the average earnings index since 1996 accompanied by a similar trend in rental prices[33].
- 2021 data showed Jersey residents spend an average of 24% of their income on **housing costs (rent payments)** which is in line with the UK.[34]
- **Rental prices** have increased at an average of 20% across qualified properties and non-qualified flats between 2015 and 2020, however non-qualified two and three bedroom homes saw an average 31% drop in prices over the same period[35]
- Low income households spend a greater share of their income on heating and motor oils than their counterparts in the highest earning households. Similarly, low income households spend proportionately less on transport services, which include air and sea fare as well as taxi services, than high income households[36].

| Weekly spend as a percentage of household income on: | Residential electricity, gas & other fuels | Petrol, diesel & other motor oils | Transport services |
|---|---|---|---|
| Lowest 20% of earners | 5.15% | 2.08% | 2.42% |
| Highest 20% of earners | 4.02% | 1.98% | 4.78% |

**Key messages arising:** There is a significant gap in the consumption of low income and high income households in Jersey. This is important as equal use of goods and services better captures the living standards of those on low incomes and correlates closely with human well-being and material hardship[37]. Similarly, indices of consumption inequality better reflect the use of durables such as housing. For instance, a retiree living off their savings accumulated over a lifetime may be living comfortably even if they have no income.

[32] Poverty in Jersey available here Impact of Poverty on Jersey Families
[33] Statistics Jersey, House price statistics at Q3 2021, available at House price statistics
[34] States Assembly Housing Policy Development Board - Final Report April 2021, Page 96 available at https://statesassembly.gov.je/assemblyreports/2021/r.63-2021.pdf
[35] Private Sector Rental Index available via Private Sector Rental Index (FOI)
[36] Jersey Household Income Distribution report 2014 / 15 based on equalised income.
[37] Jersey Household Spending 2014/15

Consumption inequality better captures the effects of rising debt, changes to interest rates, or the effects of enhanced social benefits than income or wealth measures. For instance, income inequality does not account for progressive taxes or benefits which can distort overall findings on financial inequalities. Moving forward, consumption-based indices could be used to provide a better metric of how the prioritised policies are impacting different socioeconomic groups.

Differences in consumption by household income in Jersey indicate that those on low incomes are especially sensitive to changes in the cost of residential heating and increases in motor fuel costs - spending a greater share of their disposable income on both. In some instances, these disparities will be underestimated, as those who depend heavily on fuel consumption to carry out their daily responsibilities will feel the effects of price changes more acutely. This is especially relevant as policies outlined in the preferred strategy can be grouped into transport, heating and enabling policies.

For this reason, particular consideration of their distributional impact should be given to single parent households, families with children, and those at either end of the age spectrum who typically spend the least.

## Other population characteristics

As described at the beginning of this section, there are several other characteristics of islanders, often (but not always) intersectional with financial inequality, which can also result in unequal distribution of adverse policy impacts. We have also sought to consider these where appropriate in our analysis. Some of these population characteristics are set out below (this is by no means an exhaustive list):

**Some other characteristics of Jersey's population that may be relevant when considering distributional impacts**

- **Older people**: The share of population 65 and over was 17% in 2021. People aged 50-59 now represent the largest age group and the population is continuing to age[38].
- In the 2011 census, 50% of people noted their **place of birth** as Jersey. 31% were from the British Isles and 7% from Portugal / Madeira[39].
- As of 2011 there were:
    - 73 nationalities - 50% Jersey, 31% British.
    - 20 ethnicities - 46% Jersey, 33% British
- In 2020, English was an additional language for 25.3% of students of compulsory school age in Jersey[40], up from 21.4% in 2016[41]. This increases to 27% for Primary School children and 22% for secondary school students; compared with 21% and 17% respectively for English state schools.
- Based on 2020 Class 1 social security contributions, **Portuguese people** made up 24% of the total people who earn £25,000 or less whilst only making up 15% of overall workforce[42] suggesting they are overrepresented in the lower income groups.
- Similarly, **British people** make up approximately 70% of the workforce whilst only totalling 58% of those people making less than £25,000[43] suggesting they are underrepresented in this bracket.
- As of 31 December 2019 there were 4,184 individuals claiming **long-term incapacity allowance**[44]

[38] Impacts of an ageing population on Jersey's economy - PwC
[39] https://www.gov.je/Government/JerseyInFigures/Population/Pages/PopulationStatistics.aspx
[40] Schools, pupils and their characteristics Academic year 2019/2020
[41] Schools, pupils and their characteristics Academic year 2015/2016 At a glance….
[42] Based on class 1 social security contributions data for 2020.
[43] Based on class 1 social security contributions data for 2020.
[44] Social Security statistics

- In 2021, 9% of employees were registered, 4% licensed and 88% entitled / entitled to work or exempt. Accordingly, neither those who are Registered or Entitled to Work are able to buy property freely in Jersey[45].
- Only **1%** of employees in financial and legal services are on zero-hour contracts, compared with **23%** of employees in hotels, restaurants and bars - suggesting higher levels of job insecurity and financial concern in some sectors than others.
- Agriculture and fisheries, and Hotel, Restaurants and bars are the sectors most dependent on foreign workers, with 46% and 32% of their workforces respectively being Registered or Licensed. Conversely, only 5% of workers in utilities and waste, and 7% in wholesale and retail are Registered / Licensed.
- Net household income is not evenly spread across parishes in Jersey. In 2015, the average (mean) unequivalised household income was two thirds higher in St Brelade *(£62,900)* than in St Helier *(£38,400)*. In general, household income was higher in rural parishes, and lower in more built-up areas[46].

**Key messages arising:** There are some population characteristics that may further compound distributional impacts, either directly or because they are intersectional with lower income individuals and households. If these population characteristics are underrepresented in policy design, they can be more vulnerable to adverse distributional impacts.

In conclusion to this section, it is clear that there is significant financial inequality in Jersey, and that this may be further compounded by other intersectional population characteristics. In particular, there are islanders that will likely need significant support to absorb any financial implications of the transition to the low carbon economy. Applying Principle 5 means that, when considered in the round, the costs should be distributed fairly, and those most affected by the changes should be involved in the process.

## What appraisal framework has been developed for the Carbon Neutral Roadmap?

Multi-Criteria Analysis (MCA) tools are often used by decision-makers to provide a consistent framework against which different initiatives or policy options can be compared across standardised criteria.

An MCA framework has therefore been developed in order to assess different CNR policies against a full range of economic, social, environmental and deliverability criteria. This framework describes the carbon saved by each proposed policy and allows policymakers to assess the trade-offs inherent in achieving carbon neutrality through different policies.

The MCA framework covers the following five thematic impact categories, which further break down into 27 detailed criteria. The five thematic categories are:

**Socio-economic impact**

**Environmental impact**

**Affordability**

**Political alignment**

**Feasibility**

The criteria, and their relative weightings in the analysis, were agreed by the Government of Jersey. Subsequently, Government of Jersey experts and policymakers have scored each potential policy against the criteria, in order to build a picture of each policy's impact.

[45] Jersey Labour Market - June 2021
[46] Average household income (FOI)

The MCA framework, results and accompanying methodology document are all part of the Government of Jersey's CNR policy development work, and have been shared with the Carbon Neutral Steering Group to aid decision-making.

More broadly, the MCA framework is a useful and practical tool that can be used for other policy development work going forward in the Government of Jersey, and will form part of a suite of decision-support tools under a future Economic Framework.

The development of the MCA framework was an iterative process as a first step in reducing the policy longlist down into a more relevant policy shortlist. This followed consultation with a MCA scoring panel made up of policy leads from across government.

## Using the MCA framework to begin a distributional impact analysis

The MCA framework has been used as a starting point for more in-depth analysis of distributional impacts. Across all five thematic categories, a subset of MCA criteria most directly associated with the just transition and distributional impacts were extracted. These are listed within Table 2 below.

**Table 2: Subset of MCA criteria most directly associated with the just transition**

| Subset of MCA criteria | Illustrative consideration |
|---|---|
| **Employment** | What level of local job creation or loss does the policy incur on the local and island economy? |
| **Education & skills** | What is the impact on the labour market, focussed on the shift towards skilled jobs? |
| **Opportunity for enterprise** | To what extent does the initiative support and create local business opportunities? |
| **Gender** | What likely impact will the initiative have on women, compared to men? |
| **Children & young people** | What likely impact will the initiative have on children and young people? |
| **Disability** | To what extent does the initiative help to ensure that people living with disability in Jersey enjoy a good quality of life? |
| **Cost to residents** | What is the cost to local residents? |
| **Just transition** | Does the initiative disproportionately affect those in the low to lower middle income quintile? |
| **Livability** | To what extent does the policy impact the built environment, changing the way locals interact with their local place? |
| **Communication & outreach** | To what extent does the initiative help promote sustainable behaviours through education and awareness raising in relation to Scope 1, 2 and 3 emissions? |

We assessed the full list of CNR priority policies[47] against the subset of MCA criteria above. Each policy was considered against each of the ten criteria and given a score of 1 to 5 based on the potential for adverse distributional impacts in Jersey. The scores were totalled up and averaged to arrive at a potential score for that policy. The lower the score, the higher the distributional impact is expected to be. The full set of MCA scores can be found within Appendix 2 of the CNR.

In discussion with the government, we considered these scores in the context of what we know about inequality in Jersey, and our previous experience of distributional analysis of net zero policies for other jurisdictions, to

[47] Appendix 2 of the CNR consultation draft here

agree on a subset of 8 priority policies to focus on for this review. To ensure alignment to Principle 5 there has been a particular focus on those policies that are likely to adversely impact lower income groups (the specific "just transition" criterion in Table 2 above). Some other policies were not incorporated into this subset because they are enabling policies with little impact on personal income, wealth or expenditure. Some further policies will be subject to further impact assessments at a later date and so are not reconsidered in this analysis.

**Table 3: Eight policies in the scope of this review and corresponding MCA income inequality potential score**

| Code | Priority policies most likely to have a distributional impact |
|---|---|
| **Transport policies** | |
| **TR1** | Speeding up adoption of electric vehicles |
| **TR2** | Vehicle scrappage incentive |
| **TR3** | Supporting transition fuels |
| **TR4** | Vehicle emissions duty incentive |
| **TR5** | End the importation and registration of petrol and diesel vehicles that are new to the Island from 2030 |
| **Heating policies** | |
| **HT1** | Supporting low carbon heating systems and home insulation |
| **HT3** | Energy Performance Certificates |
| **Enabling policies** | |
| **EN3** | Developing supply chains and on-island skills for a sustainable economy |

We have therefore focused more detailed distributional impact analysis on these eight policies, as set out in the next section.

# Distributional impact analysis of CNR policies

## Approach to analysis

As explained in *Context for this work* above, we have focused analysis in this section on those CNR policies most likely to have a distributional impact, according to the MCA framework, and referenced within Table 3.

It is important to note the following:

- We have analysed the consultation version of the CNR policy pack. Details on each policy can be found in Appendix 2 here. Any subsequent adjustments to the policy design are not captured here; however, distributional impact can be undertaken periodically to reflect and inform future policy variation.
- It is not possible to forecast and quantitatively assess the distributional impact of decarbonisation on households in Jersey. This is because the transition to a net zero economy by 2050 will be dynamic and take place over a long time horizon. The eventual impact will not only depend on policy choices but a range of factors, such as technological development, efficiency improvements, consumer preferences, interest rates and income growth. Data availability is also a significant constraint on quantitative analysis, as explained in *Context for this work* above.
- The analysis in this section is focused purely on the effects these policies might have on inequality and fairness, and not each policy's carbon abatement, feasibility, affordability, or broader MCA score.

In undertaking this analysis we have:

- Analysed each policy to identify potential expected positive or negative distributional impacts in qualitative form.
- Supplemented this with quantitative data if and where available.
- Drawn-out considerations and recommendations to mitigate these impacts.

## Navigating this section of the report

As we worked through the analysis, there were several cross-cutting themes that emerged, and we set these out first.

Then, for each of the two main policy areas (Transport, Heating), we:

- **Give an overview** of the existing inequalities in Jersey's economy as they relate to that sector and then, for each policy:
    - **Describe the policy** and how it could impact on inequality
    - **Present our analysis** of what the likely impact of the policy would be if implemented according to a series of assumptions
    - **Summarise key findings** for implementation of the policy
- **Make wider recommendations** - e.g. how decarbonisation policies in this sector might impact on, or be impacted by, other policies, changes in technology or demand, or other macro trends

For the final policy area (Enabling Environment) we analyse only one specific priority policy, which covers the two related areas of labour markets and supply chains. We present our findings in these areas using a similar structure to transport and heating.

## Some key considerations for implementing Principle 5

As we progressed through our analysis, the following cross-cutting messages emerged that in our view are key to successful implementation of Principle 5 of the CNR:

- **Improve data collection about inequality:** The Government of Jersey should invest in improved disaggregated data (e.g. age, gender, sexuality, ethnicity, disability, location, race, education, income levels) on a regular basis to better understand the breadth and depth of inequality, and to better inform the design of effective policies with regards to distributional impacts. Without this, it is difficult to implement evidence based policies that are appropriate for different groups in society and don't widen the inequality gap. For example, a Centre for Gender Diversity and Inclusion Statistics (CGDIS) was established by the Canadian Government. The CGDIS launched the Gender, Diversity and Inclusion Statistics Hub, which focuses on disaggregated data by gender and other identities to support evidence-based policy development and decision making[48].

- **Ensure a strong monitoring, evaluation and learning process, the results of which feed into further agile policy adjustments:** The costs and benefits of these policies will pass through households across the population - directly as bill payers, motorists or homeowners and indirectly as consumers, employees and taxpayers. However, the transition will be highly dynamic, and the costs and benefits will not fall evenly. As the Island continues to decarbonise, it will be important to better understand the factors that influence the distribution of costs and benefits. This means:

    - There must be robust monitoring and evaluation of CNR policies on a regular basis as they are implemented. Detailed theories of change should be developed and tested, with appropriate indicators and targets for success agreed and measured. This should be both from a decarbonisation perspective, but also from a Principle 5 perspective.
    - The learning from this evaluation should feed directly back into further adjusted policies and implementation plans, in the spirit of continuous improvement.
    - Budget and resources should be allocated to enable this analysis to be undertaken regularly.
    - To the extent and depth appropriate, progress and performance monitoring for the CNR as a whole will need to be integrated into the Jersey Strategic Framework. This framework guides medium term planning by the government by setting out its strategic priorities. It ensures that the policy objectives set out in the Common Strategic Priorities and Government Plan are mirrored in the Departmental Operational Plans and those of Arms Length Organisations and State-owned enterprises - all amplifying government activity in aid of achieving the long-term ambitions for Jersey. (It is worth noting that whilst this link is important, it is hard to see at the moment that this will be sufficient for monitoring distributional impacts).

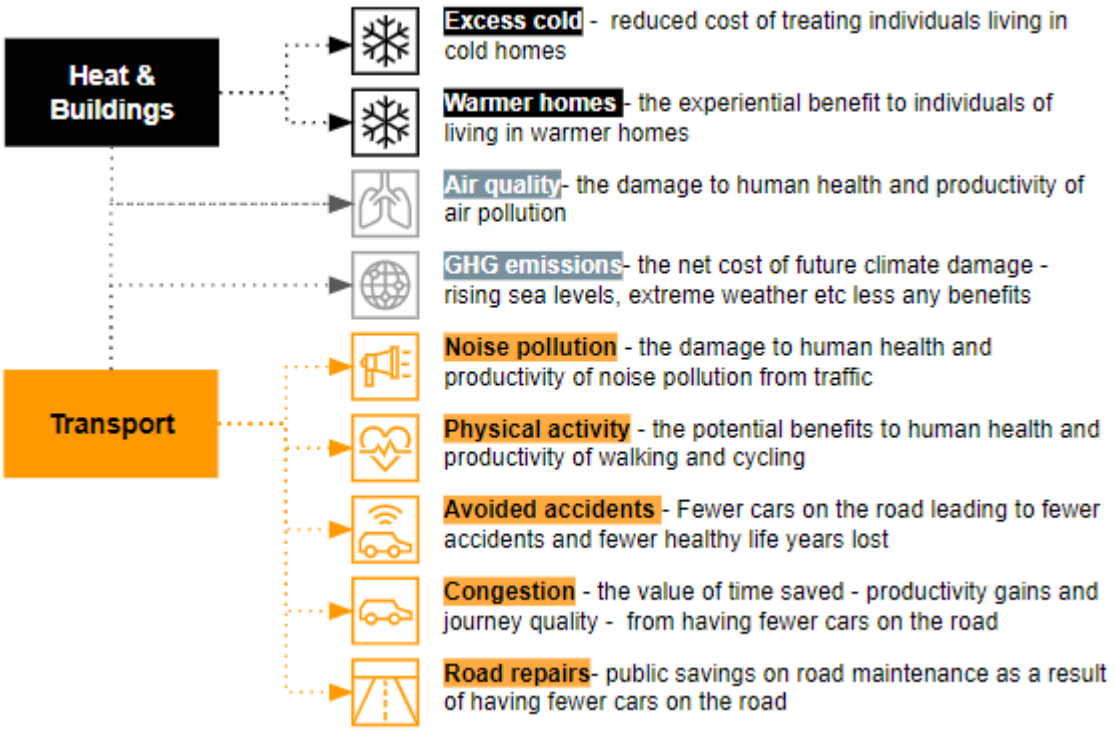
- **Continue the people-powered approach, ensure ongoing consultation with those most affected:** Building on learnings from, and the success of, the Citizens' Assembly on climate change in 2021[49], it is important that further efforts are made to engage those most affected and they should be represented and involved in policy design. Regular stakeholder consultations[50] should be held with marginalised groups to understand and capture differing needs and points of view. This can be done via a number of formats from surveys to focus group discussions, and would be a natural extension of the people-powered approach.. It is also critical that monitoring and evaluation continues with regular consultation with groups and communities across the Island to disseminate information and understand the impact of policies and proactively mitigate unintended consequences.

- **Understand the distribution of wider social benefits:** Principle 5 focuses on income inequality. However there are many wider social benefits to decarbonisation which will also be distributed across the population, varying depending on the sector. Some examples of these are set out below in Figure 1. Many

[48] OECD Policy responses - Towards gender-inclusive recovery
[49] Citizens' Assembly • Jersey Climate Conversation.
[50] OECD Gender-disaggregated data

of these may benefit lower income and more vulnerable people (e.g. improved air quality and lower congestion in town improves liveability for low income households in town who walk or use public transport). It is beyond the scope of this work to assess and quantify these wider distributional socio-economic benefits in detail, but there could be merit in doing so in the future, and continuing to monitor these. It will also be helpful to consider how Jersey's Public Finance Manual considers these broader social costs and benefits of decarbonisation, and the costs to Jersey's economy and society of doing nothing. Box 1 outlines a UK case study example of where social benefits have been successfully quantified.

**Figure 1: Wider social costs and benefits of decarbonisation**




- **Develop and implement targeted policies:** Universal grants or charges will not be effective solutions for managing adverse distributional impacts. Untargeted policies are likely to lead to taxpayers providing most support to the wealthiest. Instead, reflecting the significant variation in household characteristics and the mobility needs within income deciles, public spending should be targeted at specific decarbonisation measures for low-income households. Where this leads to lower running costs, it will also provide an ongoing benefit to the households receiving taxpayer support.

**Box 1: Modelling wider social costs and benefits in a mid size UK city**

A recent joint PwC and local authority project considered the costs and benefits of decarbonisation in a mid size UK city with a focus on buildings and transport improvements. The financial costs and benefits directly arising from decarbonisation were considered alongside the net present value of wider social costs and benefits.

Decarbonisation measures analysed for buildings included improvements in energy efficiency, use of insulation and retrofitting low carbon heating solutions. For transport an avoid and/or shift and/or improve principle was utilised:

Each solution was considered in turn to appreciate the overall outcome of implementation which in turn generated a number of wider social costs and benefits, including:

- Improved air quality
- Reduced noise pollution

- Home warmth: reduced winter deaths
- Physical health benefits from active travel
- Reduced motor vehicle accidents / lower cost of road repairs
- Improved journey times and journey quality
- Reduced GHG emissions

The financial model determined that transport measures generated the most value. Replacing cars with either cycling or walking alternatives was the single largest generator of social benefits. Over the next 30 years it was estimated that up to £100 bn of social benefits could be realised if all initiatives were undertaken, however there were a number of limitations identified and certain benefits are highly specific to the city-region under review.

There is nonetheless measurable value in wider social benefits which should be incorporated into future discussions to better appreciate the return on investment of decarbonisation.

# Transport policies

## Overview of transport policy recommendations

The overarching objective of the transport policies we have analysed is to accelerate the transition to low-carbon mobility on the island. This is achieved by discouraging the use of private vehicles and encouraging the use of (initially) more efficient fuels, and (later) the uptake of electric vehicles.

The CNR uses a mixture of incentives to transform the way islanders move around the island. Transport is integral to improving equality, ensuring access to jobs, education and services. This review is limited to the impact of the five policies in Table 3 and recommendations are made based on these policies.

The total cost of ownership of an electric vehicle relative to an equivalent petrol or diesel (ICE) vehicle depends on a variety of factors such as price, access to finance, variation in usage, maintenance costs and cost of charging. Currently the upfront cost of an EV is higher than for an ICE equivalent.

Looking across the transport policies in Table 3, there are three common areas of action that will mitigate the adverse impacts on inequality:

- **Access to finance:** Whilst grants will remove the marginal differences between the purchase of new or second hand cars, this will likely only support upper and upper middle income households who choose an electric car. The second hand ICE market is large in Jersey and therefore the marginal cost between a second hand ICE vehicle and an EV is a major blocker. The grant will not address this barrier for many households. Supporting low income households with access to low interest finance to afford a new or second hand EV car could open access to long term financial savings, on the assumption the loan maturity date is adjusted to ensure that low income households see annual savings on their bills. Vehicle finance in Jersey is unregulated, meaning that lower income groups may be taken advantage of with attractive offers that are in reality not beneficial. Developing a form of consumer credit regulation would help mitigate these challenges.

- **EV infrastructure:** A clear barrier to the uptake of EVs will be the infrastructure required to charge the vehicles. Firstly, the standardisation of EV charging infrastructure on the Island is essential to ensure that two tier infrastructure does not develop on the island (e.g between fast chargers and standard chargers, the compatibility of different types of EVs, and/or geographically between St Helier and elsewhere). Secondly the location and development of this infrastructure must accommodate groups such as women and people with disabilities. This means secure, well-lit and accessible charging points, and ensuring that charging points are located conveniently for services provided for more marginalised or vulnerable groups.

- **Public and active transport**: The transport policies we review in this report do not exist in isolation. We note that there are other transport policies that will play an important role in ensuring Jersey's decarbonisation journey is an equitable one[51]. In particular, many recommendations we make point to and

[51] Ignoring any wider redistributive policies that impact general taxation and/or spending.

are contingent on *TR9: Bus service development trials* and *TR10: Active travel*, which will be further developed later this year as part of *TR8: Sustainable Transport Roadmap*. It is therefore absolutely fundamental that the Sustainable Transport Roadmap is developed and sufficiently funded as a key delivery mechanism for the CNR, and that it is entirely aligned and consistent. Failure to do so will lead to otherwise avoidable adverse distributional impacts, as set out in more detail below. With this in mind, we summarise the key messages arising from this distributional analysis for the Sustainable Transport Roadmap in Box 2 below. More broadly, we note there are also planning principles outlined in the Bridging Island Plan which reiterate the importance of proper design to develop living neighbourhoods, thereby reducing the need for travel.

**Box 2: Key messages arising for *TR8: Sustainable Transport Roadmap* from this distributional impact analysis**

**Importance of public and active transport for the CNR:** Public and active transport is of particular importance for marginalised groups and those living in out-of-town areas. Services are further away, incomes are often lower, and transport costs higher. The policies we have assessed will make private mobility more expensive on the island for those who cannot afford to shift to electric. The Sustainable Travel Roadmap, TR9 and TR10 in particular, and specifically low cost public transport with good regular coverage, will be essential to mitigate the impacts of the policies analysed in the report.

**Current levels of funding for TR9 and TR10 do not look sufficient:** Currently, these policies have a combined 4 year budget of £1.8 million which is not likely to be sufficient, but further plans will be published later in 2022. Additional measures could be taken to earmark funds received from TR4 to boost the TR9 and TR10 budget. Other innovative financing or public-private investment solutions could be explored. What is key is that the funding challenges associated with provision of sustainable transport will have to be addressed in order to provide viable public and active travel alternatives to private ICE vehicle use for islanders and avoid adverse distributional impacts.

**Where funding is spent matters:** Plans for both TR9 and TR10 should consider where money is best spent to ensure equity. For example, by appraising new bus or bike routes based not only on emissions reductions or expected volume, but on the accessibility the route will provide to underserved and/or lower-income households.

**Free travel for marginalised groups tends to have broad socioeconomic benefits:** Whilst the introduction of £20 annual passes for U18s in Jersey should help from a price perspective (alongside the already established senior citizen bus pass), any assessment of passenger revenues as a share of investment should be made in the context of wider socioeconomic benefits driven by public transport. Experience from elsewhere suggests that free travel for marginalised groups (including young people) has broad socioeconomic benefits, for example the Young Persons' Free Bus Travel scheme launched in Scotland[52] [53].

**Some key areas of action:** More specifically, drawing together our following analysis of the CNR policies and our experience of working with other places, we suggest consideration of the following in the further development of TR8, TR9 and TR10 as appropriate:

- Investment in cycling and walking infrastructure
- Development of the bus service and other traffic reduction initiatives
- Development of shared Mobility-as-a-Service solutions (e.g. equivalents of UberPool carpooling which operates in places where there are constraints on provision of or access to public transport)
- Focus on school travel initiatives and new transport technology, including personal light electric vehicles

[52] Young persons' Free bus travel scheme for under 22s | The Highland Council
[53] Case study: Free bus travel keeps young Londoners socially connected | NIHR

## TR1. Speeding up adoption of electric vehicles

### Quick summary of policy

Speed up the adoption of electric vehicles by subsidising the cost of buying, parking and charging and exempt them from planned increases in vehicle emissions duty.

### Analysis: How the policy could impact inequality

*This policy could benefit middle and higher income households and could exclude marginalised groups such as low income households, older adults, people with disabilities, ethnic minorities and people of colour. This will primarily impact wealth inequality with middle and higher income households purchasing the expensive assets using government subsidy.*

**Low income households**

The typical additional marginal cost of new electric vehicles is estimated to be between £12,000 and £16,500 when compared with new petrol or diesel (ICE) equivalents based on EU data[54]. The proposed subsidy of 35% of the purchase costs of the electric vehicle, or £3,500 (whichever is lower) bridges some of the price parity between equivalent ICE and EV models. However, low income households will find it difficult to pay the upfront cost of purchasing a new vehicle - most lower income households do not buy new cars. International evidence suggests that the second hand market for electric vehicles has increased from 0.1% of the cars registered in 2016 to 0.9% in 2021, based on registrations in Germany. So anecdotally whilst the European market is small it is experiencing high growth and will be an important entry point into the EV market for lower income groups in future[55].

Historically, second hand cars in Jersey have been relatively cheap compared to elsewhere. This in part reflects the lack of any requirement for annual roadworthiness testing. However, technical inspections of all vehicles for roadworthiness will become mandatory in the coming years, currently expected by 2024.[56] The introduction of roadworthiness testing will likely reduce the number of and availability of very cheap ICE cars where the cost of maintenance may exceed their value. Based on the 2014/15 household spending survey the lowest 20% of earners spend approximately £635 per year (inflation adjusted) on the purchase of second hand vehicles. This rises to £3,880 per year (inflation adjusted) for the highest earning 20% of people[57].

Owning a new EV versus a new petrol/diesel car is often cheaper over the longer term. The cost of maintenance, wear and tear and depreciation is typically 40% less per mile than an ICE equivalent. While using current prices, EV could save households up to £1,250 over a year on filling up their tank. This should help households but the benefits will be directed to middle and high income households who can afford the upfront capital to buy new cars to own or upgrade their current EVs. Means-tested and / or targeted subsidised loans such as 0% APR purchase options and loan loss guarantees (where the government guarantees loans or hire purchase schemes from car dealerships) for lower income households could remove the spending gap and enable low income households to purchase EVs and pay them off over a longer period, removing the barrier to entry.[58]

**Older adults**

17% of Jersey's population were over the age of 65 in 2021. Assuming a continuation of recent migration trends, those over 65 could account for 22% of the total by 2030 - growing from

[54] Hitting the EV Inflection Point
[55] The role of the used car market in accelerating equal access to electric vehicles
[56] 2018 Jersey International roadworthiness standards
[57] Lowest 20% of earners spent £540 per year, highest 20% spent £3,300 in 2015. Inflation adjusted to 2021 values. 2014/2015 spending survey.
[58] Quantifying the economic equity implications of electric vehicle

approximately 19,000 today, to 25,000 by 2030.[59] Older adults are generally more reliant on vehicles due to their reduced mobility, to maintain their independence and to facilitate social contact[60]. For this reason, the distributional effects of carbon neutral policies should give particular consideration to older adults. One in six private households do not own or have access to a car in Jersey[61]. This increases to almost 1 in 5 households that draw a pension. The ONS conducted a survey in the UK in 2021 which showed that older adults are 'very unlikely' to switch to an electric vehicle.[62] As a result, this policy by itself is unlikely to encourage older age groups to switch, although future technology (e.g. autonomous vehicles) set within EVs may incentivise older adults to make the switch in the future.

Studies have shown that the main deterrents are concerns about access to charging points and battery life.[63] As a small island Jersey may not have a significant issue with battery life compared to using EVs abroad; however Jersey-specific deterrents could be determined and resolved to facilitate a larger uptake of EVs (noting some may be beyond local control, such as the relatively unreliable EV network in France at present, where many islanders like to go on sail-drive holiday) . Older adults are also generally the least likely group to have had previous experiences with EVs and so there may be an information gap. Exposure and engagement with this community may help.[64]

### Younger drivers

On the contrary, the ONS survey suggests 52% of all 16-29 adults that drive a conventional car are likely to switch in the next ten years.[65] This policy could therefore help younger drivers from middle to higher income households switch.

Wider socio-economic benefits can also be realised, such as improved productivity resulting from lower congestion and noise pollution. There will also be health benefits arising from cleaner air which will benefit the entire community including young people, and particularly those in urban dwellings most exposed to poorer air quality.

### Women

Our analysis of Jersey suggests there is inequality of income distribution between women and men despite women making up a higher percentage of the workforce in the top ten industries by headcount.[66] As a result, women may be less likely to have the up-front capital available to benefit from this policy. Additionally, women generally tend to buy less EVs than men[67]. This could be due to a variety of factors including the marketing culture around EVs and importantly EV infrastructure. Safety concerns may also deter women from switching to EVs particularly where charging infrastructure is installed in areas that are quieter and less well lit.

### People with disabilities

41% of Islanders with disabilities experience difficulty travelling around Jersey and particularly blue badge holders are significantly affected by policies in the transport sector.[68] Electric vehicles don't currently suit the needs of some people with disabilities who have trouble accessing them and there aren't many EVs on the market that would cater to this group. Studies with people with disabilities who are EV owners cited the issues around the weight of charging cables, lack of ability to access charging stations on wheelchairs/electric scooters and parking spaces by chargers not having enough space between them [69], as well as chargers not being present in designated parking spaces. As a result, people with disabilities may find it difficult to switch to EVs meaning they may not benefit from this policy. However, similar to the above point on older adults, a study by TFL shows that higher exposure and information on EVs

[59] Impacts of an ageing population on Jersey's economy - PwC
[60] https://link.springer.com/article/10.1007/s11116-016-9680-z
[61] 2011 Census - Chapter 6. Number of cars, vans and motorcycles
[62] Over half of younger drivers likely to switch to electric in next decade - Office for National Statistics
[63] https://content.tfl.gov.uk/gauging-interest-for-evs-among-disabled-and-elderly-drivers.pdf
[64] https://content.tfl.gov.uk/gauging-interest-for-evs-among-disabled-and-elderly-drivers.pdf
[65] Over half of younger drivers likely to switch to electric in next decade - Office for National Statistics
[66] Channel Islands Women in Work Index 2021
[67] Who will buy electric vehicles? Identifying early adopters in Germany - ScienceDirect
[68] https://www.gov.je/Government/Pages/StatesReports.aspx?ReportID=2849
[69] Electric vehicles are the future for everyone — except disabled people - The Verge

may make people with disabilities more likely to buy EVs. [70] It will be important to develop EV charging infrastructure to accommodate people with disabilities.

## TR2. Vehicle scrappage incentive

### Quick summary of policy

Introduction of a vehicle scrappage scheme to target getting rid of the most polluting vehicles with a £500 green living credit.

### Analysis: How the policy could impact inequality

*This policy is more likely to benefit middle and higher income households who may have redundant vehicles to trade in. Lower income groups are unlikely to be able to trade in their car (without additional support for alternative transport). This policy is also likely to exclude groups with limited mobility and those living in rural areas. However, with better public or active transport alternatives, these incentives could also benefit low income households. The policy will primarily impact consumption inequality with the lower income households being unable to scrap their car due to the high replacement cost, the middle and higher income households will be able to utilise the credit and afford a replacement car.*

**Low income households**

In the UK, 96% of cars owned by lower income households are used ICE vehicles, which is anecdotally also reflected in Jersey.[71] People who live in areas with limited transport options are often forced to buy cars, even if they are from low income households, to meet their mobility demands and to counteract the additional costs of travelling with children[72]. Although this may cause significant financial stress, they have to undertake this expense to go to work, school and access services. The policy is unlikely to convince households outside St Helier or other road accessible areas to give up their ICE vehicle as it will not be sufficient, even in combination with TR1, to mitigate the barriers to switching to EV, as discussed above. Also, taking the oldest and/or cheapest cars out of the local market suggests the overall average price for vehicles is likely to increase, making them less accessible to the lowest income households.

A large number of low income households are concentrated in St Helier, where access to amenities, employment opportunities and education is arguably easier than in rural parishes[73], and where active and public transport are viable options. However, although the £500 can be used on public transport, lower income households still have to be incentivised to sell their car in favour of public transport, with better provision and access to public transport at price points that are affordable. In Scotland, lower income households had lower levels of car ownership (37%) if they had access to better public transport (bus service every 10 minutes) compared with lower income households who had more limited access to public transport (bus service once an hour).[74] An increase in access and provision of public transport and active transport with appropriate pricing and accessibility for people with disabilities could also help other groups including older adults, young people and women. It is however essential to consider accessibility across the Island and not just in urban centres.

[70] https://content.tfl.gov.uk/gauging-interest-for-evs-among-disabled-and-elderly-drivers.pdf
[71] Going electric How everyone can benefit sooner - Green Alliance
[72] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/784685/future_of_mobility_access.pdf
[73] https://www.gov.je/SiteCollectionDocuments/Government%20and%20administration/R%20Relative%20Low%20Income%2020150127%20SU.pdf
[74] SHS topic report : mode choice - London School of Economics and Political Science

**Women**

Women tend to have different travel patterns to men, more often engaging in 'chain tripping' (sequence of trips that start and end at home). This is because they tend to take on more unpaid care responsibilities including childcare leading to them working part time. This leads to higher fares being paid by women who have to take shorter trips more frequently. Childcare responsibilities are also more likely to exclude women from active forms of transport. Schemes such as Jersey's EVie park and ride could be extended to include on-demand electric cars, incentives could be offered for cargo bikes to allow the transport of children and/or goods whilst cycling, or the electric hopper bus could be expanded to provide greater coverage.

**Older adults**

Older adults, particularly those with a car that remains unused, are likely to benefit from this policy if funds can be used for alternative means such as public transport or heating homes. Olders adults tend to have a greater number of vehicles than younger age groups[75], some of which may be redundant, and so this demographic will be able to benefit from the scrapping incentive without a significant impact on their ability to travel.

**Low cost mobility options**

Investment in public transport to ensure mobility options for those without a car can be costly, therefore the expansion of lower-cost modes of transport typically includes electric bikes, scooters and carshares.[76] For example in Huton California, the Green Raiteros was launched where 2 electric vehicles, an office and a garage were purchased to provide rides to the local community where public transport options were limited to meet their mobility needs. Drivers were volunteers from the neighbourhood and all rides were free for the first six months and then passengers were asked to pay $0.55 per mile afterwards.[77] It would be useful to conduct mobility needs assessments with different communities to understand if schemes like this may be effective.

## TR3. Supporting transition fuels

### Quick summary of policy

Bring forward a proposal in the Government Plan 2022 to subsidise the rate of fuel duty charged on second generation renewable diesel (SGRD), by 32ppl (pence per litre) from 2023 until 2026.

### Analysis: How the policy could impact inequality

*This policy could benefit middle and higher income households but is unlikely to directly benefit marginalised groups including low income households, older adults, women and people with disabilities without other supporting policies. This will impact consumption inequality with a greater saving attributable to middle and higher income households who can afford the marginally more expensive SGRD.*

Depending on the vehicle age, no modifications need to be made to engines to use SDRD and it does not increase the need for maintenance of cars.[78] As a result, people can continue using their diesel cars at the same cost rather than having to pay higher operating costs. Subsiding the cost of SGRD by 32 ppl will help to make it more affordable and could incentivise more middle and higher income households to use it instead of regular diesel. The use of lower emission and cleaner fuel would also decrease exposure to pollutants for everyone, lowering the risk of health complications.[79] Better air quality will benefit everyone, especially those living in low income urban households which tend to be based in more densely populated town centres with greater vehicle traffic. However, this policy is unlikely to incentivise lower income households from switching to

[75] • Car or vehicle ownership in the UK 2017, by age | Statista
[76] Expanding zero-emission mobility equity and access
[77] MOD Learning Centre: The Story of Green Raiteros: A Shared & Electric Lifeline for California Farmworkers, 2020
[78] What is the difference between renewable diesel and traditional biodiesel - if any? | Neste
[79] Air pollution and children's health

SGRD as it will still be the more expensive option increasing household bills by £96 per annum[80] compared with regular diesel. Given the financial stress from current diesel prices and no other supporting policies, low income households are very unlikely to benefit from this policy. If the government subsidised SGRD to create price parity with regular diesel, everyone who drives a diesel car could benefit from this policy, regardless of whether they are able to or are willing to switch to an EV. There is a need to do further modelling and forecasts on SGRD as part of programme design to understand exposure to financial risks and to align this to the planned ban date for ICE vehicles.

## TR4. Vehicle emissions duty incentive

### Quick summary of policy

Apply no level of Vehicle Emissions Duty (VED) on zero carbon vehicles and increase VED on all domestic petrol and diesel vehicles each year until at least 2030.

### Analysis: How the policy could impact inequality

*The cost of a vehicle is made up of the upfront purchase price, maintenance, fuel and taxes. By increasing the price of VED, this measure is intended to incentivise households to switch to EVs. This policy will make EVs more attractive and benefit those who are able to make the switch early; however, for reasons discussed, it is unlikely to directly benefit marginalised groups including low income households, older adults, women and people with disabilities. This will impact consumption inequality by increasing the cost of fuels for the vehicles used primarily for these marginalised groups.*

**Lower income households**

Transport costs make up approximately 10% of the total weekly expenses for Jersey households in the lowest gross income quintile[81]. By increasing VED each year until 2030, lower income households and other marginalised groups will be hit the hardest as they cannot afford EVs and may have limited access to public transport, leaving them with no alternative but to absorb this extra cost. Without better provision of public transport or an affordable second hand EV market, considerations should be made to means test VED for low income households and other marginalised drivers. Conditions could be applied to incentivise the use of SGRD if modelling suggests this will be cheaper, or if the suggested policy around price parity for SGRD and regular diesel is enacted.

**Businesses**

The policy will also affect small to medium sized businesses, especially construction, taxi drivers, couriers and distribution who may not have the funds to buy EVs. They will need substantial upfront money to switch their fleets to EVs, so this will increase business costs which could be passed on to consumers. Supporting policies such as 'Loans for Businesses' that Transport for Scotland has designed would be beneficial for these businesses. This scheme provides interest free loans of up to £120,000 and provide up to £50,000 towards purchasing EV or hybrid vehicles[82]. Similarly there is an incentive scheme in place in Ireland for taxi drivers[83].

[80] Carbon Neutral Roadmap
[81] https://www.gov.je/SiteCollectionDocuments/Government%20and%20administration/R%20Spending%20survey%20report%202015%20201605 26%20SU.pdf
[82] Electrifying the UK: Ensuring the transportation revolution benefits everyone
[83] https://www.gov.ie/en/press-release/f1623-up-to-25000-for-taxi-drivers-to-buy-electric-vehicles/

## TR5. End the importation and registration of petrol and diesel vehicles that are new to the Island from 2030

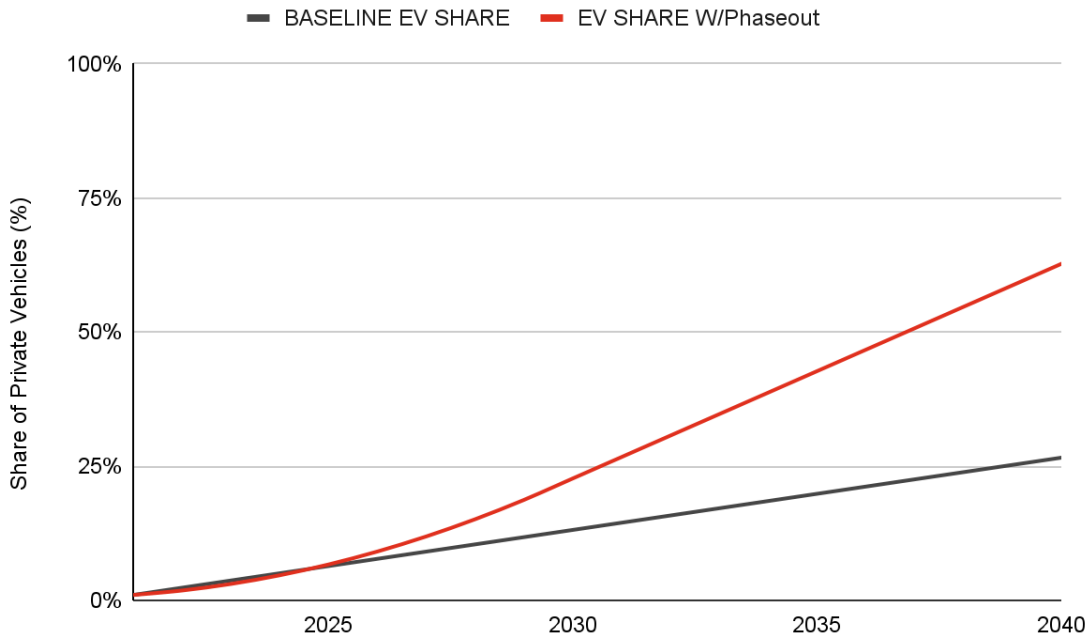
### Quick summary of policy

Bring into force legislation that prohibits the importation and registration of petrol and diesel cars and small vans that are new to the Island in 2030 at the latest and seek to extend this to other categories of vehicle at subsequent dates between 2030 and 2040.

### Analysis: How the policy could impact inequality

*This policy will prevent the purchase of ICE vehicles. With restrictions on this market it is expected that prices of the lowest cost vehicles will rise. This will impact marginalised groups reliant on private transport, in particular those from low income households. This will impact financial inequality in a number of ways, in a positive sense the increase in price of ICE vehicles on the second hand market will benefit lower income households who are able to sell the vehicles and potentially reduce wealth inequality, however groups which don't already own a vehicle may be priced out of the market or face increased costs and worsen consumption inequality.*

**Figure 2: Forecasted share of EV vehicles with and without the ban on importation of new and used ICE vehicles.**




*Source: TAG forecasts, Jersey car ownership data, PwC analysis*

Assuming a typical vehicle lifetime of 25 years, the graph in Figure 2 shows the expected impact a policy could have on the share of EV vehicles on the island. It shows that preventing the purchase alone could more than double the share of EV vehicles.

**Lower income and other marginalised groups**

As discussed, limited access to transport can reduce opportunities for employment and education. Without a strong used EV market in place and/or increased access to affordable public transport and active transport, this policy, alongside rising VED costs, could lead to social isolation and lack of access to services for these groups as they cannot afford to buy and operate private vehicles.[84]

**Second hand EV market**

Strong second hand EV markets are key to reducing the risk of social isolation of marginalised groups. Over the next few years, as more middle and higher income households buy new EVs and replace existing ones, there will be more second hand EVs available on the UK market which lower income households could take advantage of. The cost of owning a second hand EV in comparison to a used petrol or diesel car is significantly cheaper, potentially making them a good option to lower income households and older adults who are less able to withstand income shocks.[85] This is largely due to the lower maintenance requirement and less expensive electricity costs compared to fuel costs.

The second hand EV market is in its infancy with little experience and data to draw from. Currently, there is no standard way to price used EVs and assess battery performance. This makes it difficult for sellers to price their vehicles appropriately and creates apprehension for buyers who are unable to verify if the price is fair for what they are getting. Options to support the second hand market include:

- Adopting agreed standardised metrics to assess the performance of batteries to help understand value of each EV as ownership time increases[86]
- Battery performance certification to ensure transparency and reassurance for the buyer[87]
- Clear information on the replacement and recycling of batteries and the associated costs[88]
- Subsidies for second market electric cars for lower income/marginalised groups (further consideration of the eligibility criteria may be required)[89]
- Consideration of physical incentives including, GST relief and tax allowances

## Specific recommendations for each policy

At the individual policy level, our analysis has led to the following recommendations (Box 3) that could be considered by the Government of Jersey in the next phase of programme development and design to mitigate potential adverse distributional impacts:

[84] Inequalities in mobility and access in the UK Transport System - Government office for science
[85] Going electric How everyone can benefit sooner
[86] Second-hand electric vehicles: what services can be offered to support this fast-growing market?
[87] Second-hand electric vehicles: what services can be offered to support this fast-growing market?
[88] How the used car market is adapting for EVs | Autocar
[89] The role of the used car market in accelerating equal access to electric vehicles

**Box 3: Policy Recommendations for Transport**

**TR1: Speeding up adoption of electric vehicles**

- **Means tested subsidy**[90] to help to cover high upfront costs of EVs i.e. higher subsidy for those from lower income households
- In line with the UK grant eligibility criteria, create a **separate subsidy for conversion of wheelchair accessible electric vehicles**[91]
- Provide services and initiatives to **support the growth of a second hand EV market**
- Create **purchase incentives for financing high upfront costs of EVs** e.g. 0% APR to help middle to lower income households (to be defined through a full consultation process) make the switch from ICE vehicles
- **EV infrastructure** - needs to be located and installed in a way to accommodate for different groups of people, both publicly and in private settings, whilst ensuring safety and accessibility for all, particularly considering: safety for women as a group which experiences more safety issues than men, accessibility for people with disabilities, access across neighbourhoods, infrastructure that allows for charging of existing EVs that may be bought in used car market and new EVs.

**TR2: Vehicle scrappage incentive**

- **Means tested living credit** i.e. higher credit for lower income households
- Analyse **provision of public transport, pricing and accessibility** especially for lower income and other marginalised groups
- The green living credit could be directed at **battery storage and home charging points** to reduce the upfront cost of switching to an electric vehicle

**TR3: Supporting transition fuels**

- **Explore the feasibility of subsidising second generation renewable diesel** (SGRD) to equal the price of regular diesel to incentivise people to switch. There is more work to do to understand the implication of subsidy

**TR4: Vehicle emissions duty incentive**

- Determine whether **VED increase** will apply to all groups or whether lower income households and other marginalised drivers including people with disabilities and older adults can be exempt. Additional conditions could be explored to incentivise the use of SGRD.
- **Supplementary policies to support businesses** reliant on vehicles (e.g. subsidies and grants to help with the switch to EVs). It will be important to also consider the variance of vehicle usage for each particular trade (e.g. some trades requiring constant car use and some only occasionally), and deploying the subsidy scaled on this basis.

**TR5: End the importation and registration of petrol and diesel vehicles that are new to the Island from 2030**

- Provide services and initiatives to **support the growth of a second hand EV market**.
- **Provide or increase access to low cost transport** options including electric scooters, bikes and car share schemes

[90] Also known as income based subsidy, defined as a test to determine the level of support required based on the individual's ability to support themselves

[91] Plug-in Car Grant Vehicle Application Form and Guidance Notes | UK Government

# Heating policies

## Overview of heating policy recommendations

The overall objective of the heating policies we have analysed is to increase the uptake and make more accessible low-carbon heating technologies. This is achieved by providing the requisite subsidies for low-carbon heating systems / home insulation and creating a minimum standard of energy efficiency in homes and commercial properties by 2026 meaning it will no longer be possible to install a new heating system with a hydrocarbon boiler. At present, Jersey has an estimated 25,000 fossil fuel boilers heating domestic and commercial properties, and an additional several thousand gas cookers and hobs. Overall, 37% of Jersey's emissions can be attributed to residential and business heating, cooling and cooking using fossil fuels (i.e. oil and gas).[92]

The right to adequate housing is a well recognised economic and social right, and is central to human dignity which can impact other human rights (i.e. family life, privacy, and health). Some islanders are let down by the quality of the accommodation that they can access. The current imbalance between supply and demand in the housing market has contributed to the increase in property prices (the average house price in Q3 2021 in Jersey exceeded £800,000, up from £533,000 in Q3 2011)[93]. This has resulted in a significant challenge for lower income households to access quality, affordable housing.

It is also worth emphasising there are many global external factors currently increasing the price of energy for consumers. Those price rises will likely also have a significant distributional impact, with adverse impacts for lower income households and smaller businesses. The rises may also shorten the payback period for installation of low carbon or energy efficiency measures, for those that can afford them. However it is out of the scope of this report to consider those implications directly at this time.

The review in this report is limited to the two policies outlined in Table 3 and recommendations are made based on these policies. However, these two policies do not exist in isolation. We note that policy *HT1 Supporting low-carbon heating systems and home insulation* (HT1[94]) is a key driver in making low-carbon technologies more accessible and affordable, and may impact the *HT3 Energy Performance Certificate*s policy if property owners are required to meet a minimum standard of energy efficiency. Currently, the HT1 policy has a four year budget of £5.7 million which may not be sufficient to support the transition from fossil fuel heating systems to low-carbon technologies. We recommend that the HT1 policy should include a distributional analysis of how the money is being used and what groups are receiving subsidies to ensure equality.

The policies outlined in this section utilise financial incentives to transform the way that Islanders heat their homes. Following our analysis we have made recommendations in Box 4 that should mitigate negative impacts that the heating policies have on inequality.

There are three common themes overarching the policy recommendations:

1. **Focusing on older homes**: In lieu of data on the efficiency of homes, focusing on pre 1997 built homes in the interim should see the greatest decarbonisation of the heating sector. Alternatively, policy makers could make use of available data on heat loss by building in Jersey to inform future eligibility requirements[95].

2. **Access to finance:** While subsidies will decrease the upfront costs for low-carbon heating systems, this may only benefit upper and middle upper income households that choose to be more energy efficient.

   Those in the lower income demographic are likely to be renting their properties and therefore the landlord will be responsible for capital investment decisions. It is unlikely that tenants will choose to invest in a rental property they may only be resident in for a short period. Landlords may independently choose to fit low-carbon heating systems, although the cost of installation is likely to be passed onto the tenants which will only further disadvantage lower income households and strain an already limited household budget.

[92] Key emissions source – heating, cooling, cooking Our role fuel switching homes and businesses
[93] Based on a three bedroom house https://opendata.gov.je/dataset/house-prices/resource/07e4474f-14df-49e4-9ed8-695b4adfd3f4
[94] Including UNF1
[95] Jersey Heat Loss Map available: Heat loss map

To ensure that low-carbon heating systems are available to low income households, we recommend that, in addition to the subsidy, variable financing options be made available (e.g. 0% APR loans to help middle / lower income households). There are several ways in which this could be achieved, including via revolving loan funds that are offset against savings in energy bills.

3. **Clarifying the process:** Although progress has been made in disseminating information regarding 'easy ways to save energy & money',[96] further efforts should be made to circulate and make widely available information about: i) the carbon neutral policies, ii) the subsidies associated with each policy, iii) the potential cost saving information related to implementing low-carbon heating systems, and iv) the technology available to make their properties more energy efficient.

   A clear barrier to the uptake of low-carbon technologies (other than the financial implications), is the lack of trust in the products. Homeowners tend to rely on recommendations from their peers or from the installer about whether and how to replace their boiler. Given that overall demand is low and installers often do not have the capability, they are therefore unlikely to receive these recommendations. This means that potential customers are more likely to be influenced by bad experiences that they hear about through the news or from peers. As such, bad news stories about poor heat pump installations can make customers distrust the product.

   Further to this, property owners don't know that they should be switching energy sources or installing heat pumps. We know in the UK, across all types of housing, many people are failing to install heat pumps in their properties because they are not familiar with heat pumps or that their gas boilers produce emissions.

   Updated information should be provided to all households and installers in order to dispel any misconceptions and misinformation. Special consideration should be given to the older adult demographic as they might be less digitally inclined and may not be able to access information via the internet.

## HT1. Supporting low-carbon heating systems and home insulation

### Quick summary of policy

Provide a subsidy to enable both households and commercial businesses to transition to low carbon heating systems. UNF2: General energy efficiency incentive, a previous standalone policy, has now been incorporated into this policy as the affordability and costs of insulation is particularly relevant to this policy. The scheme will run from 2022 until 2025:

- Existing properties with gas or oil boilers will be eligible to apply for 50% funding for low-carbon heating systems (and energy efficiency measures with some caveats), up to a maximum of £5,000 where the gas or oil boiler is being replaced with a qualifying renewable technology or electric heating system
- Those on lower incomes will be entitled to a maximum of £10,000 without needing to match funds.

### Analysis: How the policy could impact inequality

*This policy may disproportionately benefit higher income households that own their property, and could exclude those from a low income household, those that are 'Registered' and or are renting property. This is likely to impact wealth inequality through enabling middle to higher income households, those who own property which is only 54% of the population, to improve the value of their properties without equal benefit being applicable to the lower income groups or the 46% of people who don't directly own property.*

[96] Easy ways to save energy & money - Government of Jersey

### Low income households

Retrofitting an existing property with a heat pump can involve bespoke and complex installation. Air source heat pumps can cost between £6,000 to £12,000[97], while ground source heat pumps and installation can cost between £18,000 and £25,000 based on UK data. The UK's Committee on Climate Change has estimated that in the UK it would cost from £16,700 to over £26,000 to retrofit properties to an energy efficient standard.[98] As low carbon technologies become more accessible and affordable, the 50% subsidy up to £5,000 (and £10,000 for lower income households) helps to bring the relative cost of installing a low carbon heating system in line with a fossil fuel alternative. The payback period for heat pumps is dependent on a number of changeable variables (e.g. energy prices, heat pump costs) however it is overall in a downward trend meaning it will take a shorter period of time to recoup the initial installation costs through savings in energy bills going forward.

In Jersey, retrofitting electric heating solutions is a viable alternative to heat pumps due to the low carbon energy sources used on the island and the dedicated, low cost, energy tariffs available for specific heating solutions[99]. On this basis the CNR is proposing a range of electric heating options. Retrofitting an electric boiler unit is estimated to cost around £5,000, however financing options over a 10 year period can spread this cost through a £45 per month charge[100]. Therefore, electric boilers are a cost effective alternative which benefit lower income households, and can reduce emissions, so long as Jersey's electricity supply continues to be low carbon, and tariffs continue to be affordable.

Although benefits may be realised through the effective installation of loft insulation (which could save households between £135 to £250 a year on heating expenses[101]), low income households and small businesses may find it difficult to pay for the upfront costs of purchasing and installing low-carbon heating systems. Those deemed to be in the socio-vulnerable category are:

- more financially constrained (i.e. without subsidies they are less likely to be able to afford the greater up-front cost of the technologies, and find it more difficult to borrow money commercially), and;
- less likely to be the owner-occupiers and are more likely to be in rental or state owned accommodation.

Although this policy may contribute to the reduction of Jersey's carbon footprint, the government will need to consider the potential adverse effects on some of the island's population. For example, the transition to new technologies may accelerate job losses in Jersey's domestic provision of heating oil and gas distribution and maintenance. That said, if there is continued investment in low-carbon heating technologies from households and businesses, and appropriate reskilling takes place, there will likely be a positive impact on job opportunities and earning potential.

There is also a risk that the reduction in household bills may not translate into a lower overall use of energy. For example, Jersey's Home Energy Scheme launched in 2012[102] provided free home insulation to certain lower income households. Whilst the scheme had the intended effect of reducing energy *bills* it did not necessarily result in a reduction in energy *usage* as households took the savings in comfort, keeping the heating on for longer as a result of the insulation, or using energy for other purposes, without an increase in their bill. This is an important consideration of the link between insulation and a reduction in carbon emissions.

More recently Jersey Electricity's launch of the My JE app is an example of a change in mindset and a form of reskilling. This app allows users to monitor their electricity usage on a daily basis and adjust their habits, or identify heating faults, and see the impact on the usage of electricity

[97] Air Source Heat Pumps – Isle Eco Jersey
[98] The costs and benefits of tighter standards for new buildings - Final report
[99] https://www.jec.co.uk/your-home/tariffs-rates/economy-20-plus/
[100] https://www.jec.co.uk/your-home/help-advice/switching-to-electric/finance-for-electric-heating/
[101] https://sse.co.uk/help/energy/energy-efficiency/loft-insulation
[102] https://www.gov.je/News/2012/Pages/FreeHomeInsulationSchemeExtended.aspx

and the associated electricity bill[103]. Users are empowered to understand more about the impacts of their electricity usage and encouraged to explore different ways of saving energy. There may be savings identifiable from the use of this app although further analysis will be needed.

### Rental accommodation considerations

The household budget across the island is relatively strained due to expected short term increases in inflation, in particular across energy and food prices, alongside an increase in interest rates. Real wages have seen relatively stagnant growth and therefore lower income groups are particularly sensitive to any additional impacts to their budgets.

The use of low carbon heating solutions may result in a drop in the cost of heating homes, which would be exclusively enjoyed by the tenants of rental properties. This may disincentivise landlords from paying for the installation of potentially more costly low carbon heating systems as they will not receive any benefits from lower running costs. Alternatively, and particularly if the landlord does not have sufficient capital saved to fit the new equipment, the landlord may increase the rent charged to recoup the installation costs. This rent rise may exceed any benefits enjoyed by the tenants and in passing these costs on, lower income tenants will essentially be bearing the costs of installation of this equipment across the rental market in Jersey.

Incentives for landlords should be considered to enable them to invest in their properties for the benefit of lower income tenants, once current equipment has reached the end of its useful life. Additional protections for tenants should be considered to avoid lower income groups footing the bill for the installation of heat pumps in rental accomodation.

### Children

Although not directly affected by financial burden, fuel poverty and adequately heated housing can have significant and long-term effects on children and young people. In England, fuel poverty is measured against the energy efficiency rating of a house that cannot be kept warm at a reasonable cost without bringing the residual income below the poverty threshold (i.e. if the property is at EPC band D or below) [104].

Long term exposure to inadequate heat can affect weight gain in infants and young children, increase hospital admission rates for children, and increase the severity and frequency of asthmatic symptoms. If properties have become mouldy due to inadequate heating, children are three times more likely to suffer from a respiratory illness compared with children in housing that is sufficiently heated. Recurring illnesses may subsequently affect a child's education, e.g. health problems may result in a child being unable to attend school, or a cold home may inhibit the ability to study at home.[105]

### Older adults

Fuel poverty can be defined as spending more than 10% of household income on energy[106]. Fuel poverty is more prevalent in the older adult demographic of the population as they tend to have lower incomes and spend more time indoors[107]. The potential adverse consequences of fuel poverty for this vulnerable group are a significant public health concern.

Fuel poverty may affect the health of the older adult demographic through three main mechanisms:

1. Insufficient heating may result in condensation, mould and damp which may have direct health consequences
2. An increase on household fuel cost may impede the ability to spend on other essential necessities

[103] https://jerseyeveningpost.com/ecojersey/2021/05/19/a-simple-and-innovative-aid-to-energy-efficiency/
[104] The WHO defines fuel poverty as having to spend more than 10% of household income on fuel to achieve temperatures of at least 21°C in living areas, and 18°C in all other areas. https://academic.oup.com/jpubhealth/article/35/3/361/1567028
[105] 'Severe effect' of fuel poverty on children
[106] https://www.climateconversation.je/wp-content/uploads/2021/03/Factsheet-an-overview-of-Jerseys-energy-market.pdf
[107] https://academic.oup.com/jpubhealth/article/35/3/361/1567028

3. Stress caused by increased financial strain or visible degradation of their property due to insufficient heating

Based on the 2014/15 household spending survey[108] the lowest 20% of households by income spent £22.80 on electricity, gas & other fuels per week. This equates to approximately 5% of the total weekly income for this group[109], below the traditional definition of fuel poverty as spending greater than 10% of income. The top 20% of households by income spend approximately 4% of their income on the same basis. Fuel poverty under this analysis does not appear to be a significant issue for the lowest 20% of earners, however this is old data, and further analysis should be undertaken to consider the lower income groups (e.g. bottom 10%). Further recommendations for future work are included within the conclusion of this report.

## HT3. Energy Performance Certificates

### Quick summary of policy

Develop and introduce legislation to make both domestic and commercial Energy Performance Certificates (EPC) mandatory at the point of sale and rental by the end of 2024, with minimum standards being brought in sequentially from 2026.

Government will also ensure that Energy Performance Certificates are displayed on public buildings by 2025.

### Analysis: How the policy could impact inequality

*The introduction of mandatory EPCs is unlikely to cause any impact on inequality. However, the introduction of a minimum standard is likely to cause an increased financial burden on low income households and the eldery population. Additional subsidies / variable financing options should be made available to low income households / those that are renting property in order to reduce the upfront cost of trying to meet the minimum standards, or there is a greater risk of increase in consumption inequality. A definition of what the minimum standard is will be required as this will have significant implications as to how much investment is needed.*

As mentioned in the context section, 37% of Jersey's carbon emissions can be attributed to residential and business heating, cooling and cooking using fossil fuels (i.e. oil and gas). In conjunction with stimulating mass-market deployment of low-carbon technologies, there needs to be measures put in place to improve the energy efficiency of existing homes (e.g. existing housing stock should not be omitted when trying to create green new build homes and commercial buildings).

In England, 62% of properties are currently rated below EPC 'C' standard. In order for the UK to achieve net zero targets by 2030 all houses must attain an EPC 'C' standard at minimum. There is no equivalent data available for Jersey at present, however England is a useful comparator.

The introduction of mandatory EPCs may benefit those renting properties, as landlords (who previously had no incentives to upgrade their properties) must ensure that their properties reach a minimum standard. This could lead to better quality housing for those in social housing, Islanders that are 'Registered' who don't have access to better quality housing, and low-income households that are renting property. The Rent Safe scheme (21/12/2021) was recently proposed to be legally mandatory[110] and included requirements for landlords to ensure a sufficient level of energy efficiency. However this scheme was considered too burdensome on the landlord and was voted down 26 to 20. Any future EPCs will therefore need to ensure a low level of administration to remain viable.

[108] Household Spending Survey 2014 / 15
[109] Based on average household income of £23,000: https://www.gov.je/Government/Pages/StatesReports.aspx?ReportID=1726
[110] https://statesassembly.gov.je/Pages/Propositions.aspx?ref=P.121/2021&refurl=%2fPages%2fPropositions.aspx%3fquery%3drent

As HT1 provides subsidies up until 2025, the Government of Jersey should consider defining minimum standards prior to the conclusion of the scheme or extending the availability of subsidies as this will provide property owners with ample time and cheaper means to upgrade their properties. For UK rental properties, there is a threshold for work costs above which the landlord will not have to proceed with changes to meet the minimum standards (£3,500 to meet EPC E). For costs under this threshold there is a risk, as also discussed within *HT1. Supporting low-carbon heating systems and home insulation,* that the landlord passes on any costs incurred to the tenant and that these costs are greater than any reduction in heating bills which may arise. Protection for the tenants will have to be considered to ensure that lower income groups are not in effect left footing the bill for the work costs to meet minimum standards in rental accommodation.

## Specific recommendations for each policy

At the individual policy level, our analysis has led to the following recommendations (Box 3) that could be considered by the Government of Jersey in the next phase of programme development and design to mitigate potential adverse distributional impacts:

**Box 4: Policy Recommendations for Heating**

**HT1 - Supporting low carbon heating systems and home insulation**

- **Means tested subsidy** to help cover high upfront costs of low-carbon heating systems (i.e. higher subsidy for those from lower income households).
- **Variable financing options** for low-carbon technology (e.g. 0% APR finance option to help lower income households with the upfront costs).
- **Easier access to loans for lower income households** in order to pay for 'green' home upgrades (e.g. banks offering 'green loans' to pay for low-carbon technology).
- **Subsidy to offset the cost of installing low-carbon heating technology.**
- **Behavioural change is required**. This requires education as to: i) the alternatives to fossil fuel systems; and ii) the cost benefits of switching to low-carbon heating systems and what technology is available.
- **Purchase incentives for lower income groups** to encourage manufacturers, merchants and/or installers to also provide for marginalised householders rather than just wealthy households.
- **Priority to accessing subsidies should be given to those renting pre 1997 homes** as this may have the greatest benefit in the interim.
- **Articulated protection and further consideration for leaseholders** that own the heating system (i.e. leaseholders that own the heating system, what happens if the lease is terminated, who is required to cover the cost of installation?).
- **Training and support for the local construction sector** to meet the anticipated growth in demand for services and ensuring that the quality of housing is standardised
- It is stated in the policy note "Householders replacing their fossil fuel heating source will be able to include energy efficiency measures that are identified on a completed Energy Performance Certificate within their funding application".

  This can be interpreted to say that applicants can only receive insulation if they: i) are also installing low carbon heating; and/or ii) have an EPC done to see if the insulation is necessary.

  That means this policy is skewed towards HPs and away from insulation.

  This should be relaxed so that **homeowners / those renting property should be given the opportunity to decide what measures are best for their property.**
- **Effective communication about the subsidies to all demographics** (e.g. the older adult population may lack the capabilities to access information about the incentive scheme on the internet).

**HT3 - Energy Performance Certificates**

- **Pensioners with limited income / low income homeowners are provided more time / further subsidies** in order to meet minimum EPC standards.

- **Landlords renting property to marginalised groups receive a subsidy on lower quality homes** in order to meet the minimum EPC standard.
- **Clear communication** on the minimum standard and when it will be implemented.
- **Clear advice and guidance** to inform households what measures they need to put in place to upgrade the efficiency of their homes.

## Enabling policies

## EN3. Developing supply chains and on-island skills for a sustainable economy

### Quick summary of policy

This is a broad policy that seeks to ensure the island has access to the right skills and low-carbon products to enable implementation of the CNR policy package. More specifically this includes:

- Putting the development of on-island skills at the heart of future economic and skills strategies, including integrating green skills into the Future Economy Programme and the Further Education and Skills White Paper
- Working with Highlands, industry and others to design targeted training programmes and identify routes to market for key technologies
- Supporting the development of low-carbon and sustainable supply chains

### Analysis: How the policy could impact inequality

*How decarbonisation interacts with **jobs and prices** will have a large impact on the pace at which Jersey is able to decarbonise. But these two factors will also have a large influence on whether Jersey's green transition is a "just transition", as shown below.*

**Table 4: Potential future state scenarios and the impact of high 'green premiums'[111] on decarbonisation and inequality**

| Factor | Hypothetical future state scenarios | Impact on decarbonisation | Impact on equality and fairness |
|---|---|---|---|
| **Prices & availability of low carbon goods** | **Scenario 1:** Low carbon goods are on parity with or cheaper than the technologies they replace | High take up of low carbon measures in the market | No additional cost of living increase, cost savings may be achieved subject to payback period |
| | **Scenario 2:** Low carbon goods are more expensive than the technologies they replace (so-called "green premiums") | Low carbon goods are "premium / luxury goods" for the wealthy only*. Without punitive government intervention, not enough people adopt low carbon measures | The cost of living increases which impacts the poorest the most |
| **Wages, availability & quality of green jobs** | **Scenario 1:** 'Sunrise' jobs in the new green economy are good quality with good working conditions | Neutral or positive public buy-in. Enough sufficiently skilled workers in required jobs to enable decarbonisation at pace | Levels of employment remain stable or rise. No additional adverse impact on equality or fairness |

[111] The degree to which low-carbon products and services are more expensive than tho higher-carbon alternatives they replace - see GatesNotes (2020)

| | | | |
|---|---|---|---|
| | **Scenario 2:** 'Sunrise jobs' are fewer in number and/or less skilled, and with poorer working conditions than the 'sunset jobs' they replace | Lack of public buy-in to decarbonisation as it becomes associated with job losses | Levels of unemployment and poor quality work increase. This is likely to affect certain groups more than others |

**Please note, for some goods and services, a "green premium" could be a positive development for industry in Jersey, for example in the sustainable luxury tourism market (where ecotourism can command a premium, benefitting the industry here), or in the sustainable finance industry (where ESG as a value-adding service can help boost fees). However, in the context of this report, we consider the potential for adverse impacts on low income and other groups on the island.*

### Green jobs creation in Jersey

The green transition is playing an increasingly large role in the global economy. The opportunity for green job creation is significant. The International Labour Organisation (ILO) estimates there will be a global net increase of 18 million jobs by 2030 as a result of implementation of the Paris Climate Change Agreement[112].

There is every reason to believe this will also hold true in Jersey. Green jobs can either directly support the transition (e.g. low carbon goods, installations), or provide supporting services (e.g. sustainable finance industry). Indeed, many of the policies analysed in detail above, and more broadly in the Carbon Neutral Roadmap policy pack, are dependent on availability of appropriately skilled workers to implement measures.

More broadly, it is clear from wider work under the Future Economy Programme and elsewhere that upskilling and reskilling Jersey's current and future workforce is key to Jersey's future economy, in order to:

- Counterbalance expected job losses due to technology automation, which could put almost 17,000 jobs at risk by 2035 and exacerbate the digital divide[113]
- Ensure Jersey stays relevant and competitive as a jurisdiction, capturing growth in new products and services. Technology automation is likely to create at least as many jobs as those at risk, but the key questions are whether these are created in Jersey or elsewhere, and whether or not all households are able to share fairly in this growth opportunity
- Ensure high on-island workforce participation, across all age and socioeconomic groups

As such, both Jersey's approach to carbon neutrality, and its approach to upskilling its workforce, are intrinsically connected, and both feature as key components of ongoing work to develop a future economic framework for the island under the Government of Jersey's Future Economy Programme.

PwC UK recently published a Green Jobs Barometer for regions of the UK[114], setting out different indicators to measure growth of green jobs. The report found:

- The green transition is increasingly contributing to job creation and wider prosperity in the UK economy. For every green job created in the UK, a further 1.4 jobs are created in the supply chain elsewhere in the economy. Given parallels in our labour markets a similar relationship is likely to exist in Jersey.
- 1.2% of all job vacancies in the UK are currently identified as green (based on their skills profile). Given existing trends in the Jersey labour market and its vacancies rate, there may already be between 70 and 110 annual vacancies for green jobs in Jersey. The wider benefits of these jobs could support employment for between 100 and 155 islanders in other parts of the economy.
- The above are preliminary estimates based on downscaling UK data. PwC CI is currently undertaking further research to apply the full Green Jobs Barometer to Jersey, in order to fully quantify the impact of the green transition on Jersey's labour market and skills base and to uncover its full benefits to the Jersey economy. We hope to publish this in late Spring 2022.

[112] Green jobs
[113] Upskilling the Channel Islands' workforce for a digital world
[114] Green Jobs Barometer - PwC UK

### Distributional impacts of green jobs and skills

At this stage, the proposed government interventions under EN3 are not yet detailed enough to undertake a specific distributional impact analysis. The proposed steps under EN3 are focused on further work to align with the broader Future Economy Programme and Future Skills Strategy. This activity will provide a mechanism to ensure progress on implementing the CNR is not constrained by the availability of skills or products, and that future green jobs are available to those whose work may no longer exist in a decarbonised economy.

However, the following observations can be made:

- **Targeted upskilling:** It will be essential that any government investment in green skills prioritises those working in "sunset" jobs who could otherwise be adversely affected (e.g. parts of the energy supply, distribution and maintenance industry, parts of the construction industry, parts of the on-island transport industry). The forthcoming PwC Green Jobs Barometer for Jersey will help to uncover potential sunset jobs at risk in Jersey.
- **Sectoral support:** Average incomes vary across sectors in Jersey *(See - Table 1: Financial inequality in Jersey at a glance)*. It will be important to understand whether policy EN3, or indeed the CNR as whole, is likely to affect incomes across sectors differently, and if so, where the adverse distributional impacts per sector (or job roles within sectors) are likely to lie. At the moment, there is very little evidence globally of whether incomes and skills will be higher for green jobs than the traditional jobs and skills they replace. There is likely to be a need for government support for upskilling and reskilling in certain sectors, in particular for SME sized businesses.
- **Industry-education collaboration:**There are examples of good practice in upskilling collaborations on the island, including between industry and Highlands College to deliver low carbon economy training for the construction industry. It will be important to build on these kinds of initiatives to ensure the availability of skilled workers is no longer a constraint on CNR implementation.
- **Strategic direction:** The UK established a Green Jobs Taskforce[115] in 2020 to set the direction of the jobs market as it transitions to a high-skilled, low-carbon economy. It will be useful to stay close to and learn from this work, and consider whether a similar new or existing group in Jersey could usefully take on this responsibility for the island economy.
- **Stakeholder engagement:** Those whose jobs or businesses are directly affected by the green transition should be consulted in the further development of upskilling and reskilling programmes. This should extend to continued public dialogue to ensure buy-in for the significant behavioural shift that will be needed to adjust to a green economy.

### Distributional impacts of low carbon goods and supply chains

As set out in the CNR EN3 policy summary itself, anecdotal evidence indicates that the island has significant challenges in accessing sustainable products at reasonable prices, and this may act as a constraint on successful implementation of other CNR policies. The potential distributional impacts of this is highlighted in Table 4.

Policy EN3 assumes that there is a benefit to developing local supply chains for such goods and services (as opposed to importing them). Beyond Table 4, it is not possible to provide any specific distributional impacts of this intervention until the particular goods and services have been identified as gaps in the Jersey supply chain. This work is expected to conclude in 2023. Once this research is complete, further analysis to identify the potential distributional impacts of this policy intervention can be undertaken.

However, the following observations can be made:

- **Stakeholder engagement:** It will be important to consult both industry and consumers locally, and think carefully about how to optimise the wider social benefits of on-island supply chains. We already know from our wider Future Economy Programme work that sectors with longer on-island supply chains can provide greater local economic and employment multipliers.
- **Ongoing appraisal of policy options:** Any future policy options, such as selective import tariffs to reduce reliance on off-island carbon intensive goods, should be carefully considered through the lens of their

[115] https://www.gov.uk/government/groups/green-jobs-taskforce

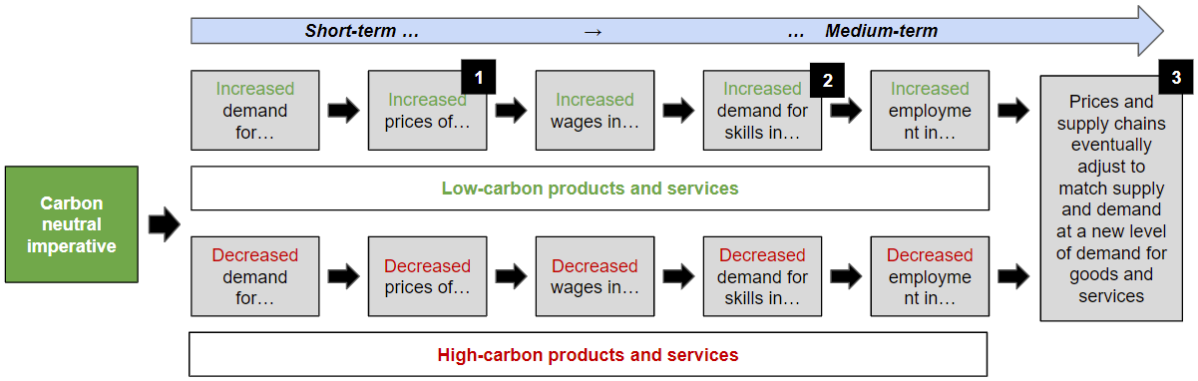
subsequent effects on living costs and how they may impact low income households, to avoid any uneven distributional effects.

- **Decarbonising existing industries:** More broadly, emissions output in Jersey is in-part the result of the island's composition of industry and employment. Elsewhere under the Future Economy Programme, we have estimated the emissions intensity of Jersey's largest industry sectors, and how output growth in one sector and across its on-island supply chain might impact the island's carbon footprint. This work will be useful to feed into future on-island supply chain analysis work under EN3.

## Policy recommendations

The degree to which different low carbon technologies contribute to Jersey's net zero transition will influence both jobs and prices, which are inherently linked. In theory, government investment, regulation and signalling (through the Carbon Neutral Roadmap) can create an imperative that drives changes in jobs and prices throughout the economy:

**Figure 3: Potential impact of government low carbon imperative on prices and employment**




These economic factors are powerful drivers of jobs and prices that, as a small, open economy, Jersey has limited scope to influence. In particular, there is a distinction between low-carbon goods (EVs, heat pumps), which Jersey largely imports, and therefore has less control over, and low-carbon services (EV mechanics, retrofit engineers) which can only take place in Jersey, usually by Jersey residents, and can more easily be influenced by policy change.

Across both goods and services, there are policy levers which the Government of Jersey can pull - some of which will help to accelerate the carbon neutral transition, some of which will make it fairer, and some will achieve both. For example:

### Import tariffs on higher-carbon goods

- By applying a carbon tax, or carbon-border adjustment mechanism (CBAM), the government can place a carbon price on incoming goods that prevent the import of higher-carbon goods that are relatively cheaper than their low-carbon alternatives. Policy *TR4: Vehicle Excise Duty* is a targeted example of this.
- High import prices can encourage domestic industries to raise their prices, and lose competitiveness. This is less relevant in the car sector - Jersey does not manufacture cars - but must be considered in other sectors if a CBAM was considered.
- However, import tariffs also raise the cost of living for Jersey residents, which is likely to be felt most by the poorest. In the case of TR4, adding a cost to the import of petrol cars does not bring down the cost of EVs, so would constitute a direct cost of living increase. However, this would be cushioned by the second-hand market in Jersey. This market is currently dominated by ICE cars, but a large second hand EV market is likely to develop in the coming years; key for delivering transport decarbonisation that is fair.
- Aligning with broader objectives for the island's economy, in particular ensuring a level playing field for on-island retailers compared to off-island retailers, there could perhaps be a case in the future for exploring whether GST on imported goods consignments is levied by carbon thresholds rather than monetary value thresholds. The data to do so may well be available in the future if the EU succeeds in implementing their own CBAM, as is currently under discussion.

- Should the government wish to explore a future CBAM, it should consider several factors, including: relevant and material sectors; ability to align with other international Emissions Trading Schemes; distributional impact; likely government revenue; and how it should interact with other import taxes, most notably GST.

### Increase support for green jobs

- As shown in Table 4 and Figure 3, government intervention can create demand for green jobs. However, the transition from existing to green jobs will create displacement in the labour market, with inevitable winners and losers. The Government of Jersey can help to increase (1) the overall number of green jobs and (2) the speed and fairness of the transition by working with industry and further education to increase the availability of appropriate training (and re-training) programmes
- EN3 aims to do this, by carrying out a gap analysis of the skills base and developing a plan for filling these gaps. Jersey's current economy is well understood, but, as discussed in the next section, predicting the low carbon technologies and services of the future - and Jersey's role in providing these - is difficult.
- There are many existing studies that forecast demand for different industrial sectors or occupations, but there is no agreed methodology for doing this, and it has not been done on a Jersey-specific basis. In 2018, the International Labour Organisation categorised occupations depending on whether they were more likely to be 'sunrise' (more will be created as nations decarbonise), or sunset (fewer) jobs. As part of PwC UK's Green Jobs Barometer'[116] occupations were mapped to sectors of the UK economy, showing that, for example, 20% of all sunset jobs are likely to be in the electricity and gas sectors.
- As the Government of Jersey consults on EN3 over the course of 2022, a similar exercise should be carried out for Jersey's economic sectors, to understand which workers are likely to need the most support from retraining programmes.

### Reduce prices by improving on-island supply chains

- Jersey cannot influence global supply chains, however if a local industry can develop to provide low carbon goods or services at prices that are competitive with imports, this would create both lower prices and higher employment, while contributing towards carbon reduction (both through the products themselves and the reduction in shipping). If these goods were competitive enough, they would also lead to an increase in exports.
- For an economy the size of Jersey's, creating the economies of scale needed to be competitive in, say, battery manufacture, is unrealistic. However, the island already has a competitive advantage in areas such as financial services and hospitality, and there may be new innovations where Jersey could have an advantage. Jersey's unique environment and geography also means it is well placed to take advantage of advances in tidal, offshore wind and solar power. Jersey has one of the largest tidal ranges in the world at 12 metres, benefits from large territorial waters to the west, and relatively high sunshine hours per annum.
- The right government policies can help to support key industries to become greener, lowering prices, and creating jobs and exports. In particular, government procurement can be a powerful lever. But it is important to be realistic about:
    - how competitive Jersey can be in each industry and
    - how accurately the government can predict the high-demand, low-carbon industries of the future
- While carbon reduction is the ultimate goal, it should be balanced against the impact of protectionist policies (either import tariffs or local industrial subsidies) on island living costs. Nascent local industries are unlikely to benefit from the economies of scale and associated cost competitiveness of larger overseas industries. Accordingly, until such time that nascent supply chains and industries have matured, protectionist policies could act as a tax on residents' living costs.
- EN3's goal of "Developing a local market supply chain for low-carbon goods and services by end of 2024 and link this to Government of Jersey procurement policies" should:
    - consult over 2022 about where government investment and procurement has the strongest chance of creating competitive low carbon industry
    - limit these sectors to a short list
    - create long (10+ year) plans for these industries and commit government assistance over this term
    - create a consistent communication strategy to signal to industry and investors in these sectors

[116] PwC - Green Jobs Barometer, (2021)

# Conclusions

**This distributional impact analysis of the Carbon Neutral Roadmap has identified potential challenges to progress in line with Principle 5.**

**Taken individually, the eight policies which have been assessed do have significant potential distributional impacts, in particular for lower income households, due to the nature of the changes which will be required to meet the Carbon Neutral Roadmap targets.**

**Jersey is not alone in this position. National and local governments around the world are grappling with how best to intervene to ensure a just transition to a low carbon economy. This does not mean that the net zero by 2050 ambition should not be pursued; catastrophic climate breakdown also has significant adverse distributional impacts for the poorest and most vulnerable around the world.**

**Rather, it means that the Government of Jersey should be under no illusion that considerable government intervention, safeguarding and transition support will be required, now and over the long term, for the Carbon Neutral Roadmap to be a success in line with Principle 5.**

**This is certainly possible, but will not be easy, in particular given the current baseline state of financial inequality in Jersey as set out earlier in this report. Ensuring a just transition will likely involve many, if not all, of the specific policies and mitigations suggested above in this report. However, beyond that it will require a mindset shift for the government and the island as a whole. It will require innovation, smart and creative strategy, joined-up thinking, new collaborations and partnerships, robust monitoring, and community participation and engagement. This will all likely carry public cost, but is critical to shifting and holding the hearts and minds of the entire island to achieve the CNR goals. There are also likely to be significant wider social benefits, and improvements in data quality, that will serve much broader purposes.**

**Jersey has the sovereign policy levers to make a difference, a wealthy society overall in global terms, and sees itself as a testbed for innovation. If a just transition can't be achieved in Jersey, then where? We hope this report initiates real momentum to ensure that everyone in Jersey can share in the benefits of the island's transition to a low carbon economy.**

## Summary of distributional impact analysis

**Transport policies** aim to transition the island to a low-carbon mobility network, through disincentivising ICE vehicles and the use of replacement fuels in the short term, followed by the uptake of electric vehicles in the medium to longer term. These policies will broadly benefit middle and higher income earners whilst negatively impacting those groups which are unable to afford the newer, more expensive, green alternatives, even with the grants proposed. Marginalised groups which are highly reliant on cheap means of transport will need to be supported through the transition by targeted financing, a credible and effective public transport system, and a considered approach to the development of electric vehicle infrastructure.

**Heating policies** aim to provide subsidies for low-carbon heating systems and home insulation in the short term, and create a minimum standard of energy efficiency in homes and commercial properties in the medium term. A greater proportion of lower income groups are resident in rental properties subject to decisions made by the landlords. These landlords may not have sufficient incentive to make the necessary updates which could negatively impact lower income groups, e.g. through rent increases. Landlords should be incentivised to invest in their properties through appropriate access to financial subsidies and targeted support provided to lower income households as required.

**Enabling policies** focus on the development of skills and supply chains to prepare for a sustainable economy. As a small, open economy, Jersey's ability to impact global demand and supply of products, services and jobs is minimal, but it can influence local uptake on-island. Selective import tariffs could be used to reduce reliance on carbon intensive goods, although these should be carefully considered to avoid a detrimental effect on lower

income groups. To avoid excessive increases in the cost of living, government could explore on-island supply chains to locally develop select industries, reducing the cost of certain low carbon alternatives (e.g. electricity). Government can boost the demand for green jobs through the application of training programmes to prepare the island for the jobs of the future, although there is some challenge in determining what these jobs might be without further research into demand and what industry is already doing. Accompanying this, a significant behavioural shift will be needed to realise the objective of these enabling policies. For this reason, public buy-in will be needed.

**In summary** it is important to consider each policy as part of a wider system of change which has many interdependencies and could result in a number of unintended outcomes for marginalised groups. Access to financial support may not be sufficient enough to offset the excess cost of green alternatives and the government should therefore selectively support low income groups to ensure they are not left behind. Local infrastructure and transport networks will need to be credible in order to provide a basic level of utility to an increasing user base. Government action will need to be measured and carefully evaluated, using appropriate data, to avoid an unsustainable increase in the cost of living which will disproportionately impact marginalised groups.

## Recommendations for further work

This distributional analysis has been performed qualitatively on a best endeavours basis, based on the available data sources and insights from elsewhere. In order to fully appraise the impact on marginalised groups, including quantitative analysis where possible, we recommend that further work is undertaken across the following themes alongside more detailed policy design, implementation and monitoring cycles:

### Improving data quality to better assess and monitor distributional impacts of Jersey's CNR

This could include collecting and analysing:

- Better disaggregated data for Jersey's population (e.g. age, sexuality, ethnicity, disability, district, education, gender, income levels)
- Second hand vehicle market statistics (including values, age of vehicles, transaction volume) broken down by ICE vehicles and EVs, as a basis for identifying what kind of measures could further accelerate growth of a second hand EV car market, and to monitor progress
- Household income and expenditure relevant to the CNR, including heating and transport costs by household with a focus on data for marginalised groups to inform consumption-based indices.
- EPC rating distributions across the island with a particular focus on the age of buildings and ratings in lower income households

It will be important to refresh the distributional analysis on a regular basis throughout implementation in order to evaluate success and adapt where necessary. This should use the above improved data as it becomes available to perform a broader scope of quantitative analysis.

### Understanding fuel and transport poverty in Jersey

How to best define and measure fuel poverty has been a longstanding debate in the UK. A better understanding of the extent of **fuel poverty** on the island as at 2022, and how this could evolve going forward, would further help with any adjustments to means-tested prioritisation of heating policies, and also with adjustments to transport policies in the CNR. Steps could include:

- Determine an appropriate definition for fuel poverty in Jersey, e.g. 10% of total household consumption expenditure
- Perform income and expense analysis to determine the extent of fuel poverty in Jersey, with particular focus on marginalised groups and the lower income levels (e.g. bottom 10% of earners)
- Undertake sensitivity analysis across the population to project increases in fuel costs and the volume of people susceptible of falling into fuel poverty

- Explore the feasibility of subsidising second generation renewable diesel and the impact on fuel poverty

**Further work to embed the CNR policies**

This could include:

- Deeper analysis of the impact of the low carbon transition's impact on jobs, skills demand and supply, prices, and goods and services supply and demand in Jersey. This would enable the government, its arms-length delivery bodies, and industry, to design targeted skills and supply chain policies. This could be a significant piece of work but could yield a positive return on investment, aligned with the broader objectives of the Future Economy Programme and the Skills Strategy as described in the EN3 section above.

- It will also be helpful to consider how Jersey's Public Finance Manual considers the broader social costs and benefits of decarbonisation, and the costs to Jersey's economy and society of doing nothing.

- Design a skills policy to support the green jobs that are likely to be the future of Jersey's carbon neutral transition

- Design a procurement, investment and industrial strategy that supports the development of low carbon products and services in Jersey

## Broader alignment with the Future Economy Programme

As explained in the Government of Jersey's *Carbon Neutral Roadmap Preferred Strategy*, published in November 2021, work to develop the CNR is closely aligned to the Government of Jersey's Future Economy Programme.

The Future Economy Programme has the overall aim of delivering a framework for a sustainable, vibrant and inclusive economy and skilled local workforce for the future. In June 2020, PwC was appointed Strategic Partner for the Future Economy Programme.

Earlier in 2021, carbon neutrality was identified within the Future Economy Programme as one of several cross-cutting priority policy development areas that will shape Jersey's long-term economic success. As part of broader policy development support work for the Government of Jersey, the Future Economy Programme is therefore supporting the understanding of the wider economic and societal impacts of Jersey's Carbon Neutral Roadmap.

There are multiple interdependencies between the future economic success of the island, and successful implementation of the Carbon Neutral Roadmap and Jersey's broader response to the climate emergency. For example:

- Ensuring future economic growth is decoupled from carbon emissions and that the island thrives within the context of a transition to a net zero economy by 2050

- Ensuring that Jersey's economy has the right skills and enabling environment to harness opportunities for innovation and provision of low carbon goods and services across all sectors, both for local and export markets as appropriate

- Optimising business productivity through energy efficiency and technology transformation

- Ensuring Jersey's economy, infrastructure and supply chains are resilient to the impacts of the changing climate and associated trends in extreme weather events

- Ensuring Principle 5 of the Carbon Neutral Strategy is applied such that all households in Jersey remain productive and are able to share in growth, that we leave no-one behind in the low carbon transition

- Ensuring the island's unique heritage and natural environment is best preserved and leveraged in for quality of life and international reputation; a green economy on a green island

Jersey is well positioned to take advantage of the economic opportunities and innovations being created as the global economy transitions to low carbon alternatives. Specifically, Jersey's natural environment and legislative autonomy lend itself well to new opportunities, for example in sustainable finance, regenerative agriculture and the circular economy, and renewable energy generation. Combined, the green transition has the opportunity to create new sector propositions for Jersey, to reorient the island's reputation around green services, and to create rewarding and fulfilling job opportunities.

To support this, the Future Economy Programme seeks to integrate key objectives from the Carbon Neutral Roadmap into the goals of a long-term economic strategy for Jersey. More specifically, the Multi-Criteria Analysis framework that underpins this work, as set out earlier in this report, has also directly tested and informed components of the toolbox of decision-support tools that will help bring the economic strategy to life in practice, as part of the development of an Economic Framework for Jersey. This will improve the quality of data that underpins decision making by highlighting and identifying synergies and tradeoffs between different policy objectives and how they will either hinder or accelerate progress in meeting objectives for Jersey's future economy.