



ISLE OF MAN GREEN PARTY CLIMATE CHANGE DRAFT CONSULTATION RESPONSE

Date: 07 May 2019

This document is a draft document to invite input on its terms from Party Members. It will be further debated at the Party Meeting on Monday 13 May 2019 at the Columba Club, Circular Road, Douglas, to be held from 18:30. The deadline for submission is Friday 17 May 2019.

Questions 1-8 are generic questions around the circumstances of the person completing the questionnaire.

9. Should Government develop a policy to encourage change of public behaviour through long term awareness raising and initiatives?

- Strongly Agree

10. Should Government consider using the potential benefit of the UNESCO Biosphere to trial more sustainable energy alternatives and showcase the results to the world?

- Strongly Agree

11. Should Government consider making climate change and energy awareness part of every child's education?

- Strongly Agree

12. Let us know your comments regarding 'Section 1: Education'.

On 4 April 2006, the Government of the United Kingdom informed the Secretary-General of the United Nations that the Kyoto Protocol to the United Nations Framework Convention on Climate Change shall apply to the Isle of Man. Under Article 10 of the Kyoto Protocol it is stated:

"All Parties.. shall: .. facilitate at the national level public awareness of, and public access to information on, climate change".

Therefore, there is a legal obligation under international law for the Isle of Man to educate about climate change.

Education is an essential element of the global response to climate change. It helps young people understand and address the impact of global warming, encourages changes in their attitudes and behaviour and helps them adapt to climate change related trends.

Due to the non-discriminatory and wide-ranging impacts of climate change, education has a crucial role to play in raising awareness about the urgency of addressing climate change programmes, including ways to be more energy efficient. Formal and non-formal education are essential to educate citizens of all ages. For the youngest and future generations who will be most impacted by climate change, positive influences during the stages of an individual's early life can contribute to a society that is equipped with the understanding, values, knowledge and skills to tackle the causes and impact of climate change.



The importance of education is illustrated by the adage of H.G. Wells, that “*Human history becomes more and more a race between education and catastrophe.*”

With respect to question 10, the Isle of Man Green Party would strongly agree to renewable forms of energy being immediately introduced in the Isle of Man on a substantive basis without further delay. The answer to 10 does not endorse the introduction of ‘cleaner’ fossil fuels nor nuclear energy production processes.

13. Should Government ensure all future housing is built to a 'nearly zero emissions' standard?

It is currently more expensive to build 'nearly zero emissions' homes than to build properties meeting minimum building regulations however, they require less energy to heat and save money over the lifetime of the building.

- Yes – all new buildings of all types

14. Should Government consider further Building Regulation amendments for extensions to existing homes to also include a requirement of air tightness testing and suitable insulation throughout the property?

Air tightness testing of a building gives an indication of the amount of air that can escape from the envelope of the building at a cost of around £300 (cost is dependent on the size of property). As air escapes it takes the heat with it. Increasing the airtightness, therefore, reduces the potential for heat to be lost, resulting in energy savings.

- Strongly agree

15. Should there be a requirement for all new public and business buildings to be active travel-friendly i.e. have facilities such as bike storage and showers for employees to use?

- Strongly agree

16. Let us know your comments regarding 'Section 2a: Eliminating energy demand'.

1 unit less of consumption can save 13 units altogether if we consider fuel extraction, energy production and transport. So, reducing consumption is much quicker to deliver reduced emissions. (*'Delivering on 2 Degrees'* – Keynote address by Professor Kevin Anderson (published 23 June 2016)).

Energy demand is an economic concept and that demand will not be reduced in the absence of rising energy prices and policies to reduce the economic barriers to improved energy efficiency (Sorrell / *Renewable and Sustainable Energy Reviews* 47 (2015) page 81). To capitalise on energy efficiency gains, it is essential that monetary gains from these efficiencies are not just applied to further consumption resulting in further greenhouse gas emissions. Gains must either remain unused or be reinvested in further energy efficiency endeavours and / or renewable energies.

The intervention with the greatest material impact vis a vis greenhouse gas emissions is the reduction in the consumption of animal products (see: *Behavioural Climate Change Mitigation Options and Their Appropriate Inclusion in Quantitative Longer Term Policy Scenarios* (2012) European Commission, page 7; and, *The Potential of Behavioural Change for Climate Change*



Mitigation: A Case Study for the European Union (2018) Dirk-Jan van de Ven et al). Therefore, the Isle of Man Government must immediately implement policies to reduce the societal consumption of animal products in the Isle of Man without further delay. Not only can the Isle of Man Government effect this end through education and public awareness policies but it should also immediately roll out the United Nations proposal to have one meat free day a week in schools and government canteens.

75% of homes will still be here in 2050. Retrofitting these properties for the future, aiming for at least 60-70% reduction in carbon emissions, will not only provide for reduced emissions and energy demand but it will also deliver a sustainable outcome for communities in the Isle of Man contending with a future of fuel poverty and price volatility. This Isle of Man Government should immediately implement investment in all public buildings to provide insulation to the optimum grade, LED and high efficiency lighting and optimum efficiency appliances / utilities. The Isle of Man Government must also immediately deliver incentive policies for the adoption in the private sector of energy efficiency adaptations. Incentives must also be adopted with a raising of the minimum standards for new build developments and as a condition to planning permission being granted on existing properties.

Lucas Chancel and Thomas Piketty (see: *Carbon and inequality from Kyoto to Paris* (2015)) have shown that just 10% of the global population is responsible for 45% of global emissions, while the bottom 50% of global emitters contribute just 13% of global emissions. These statistics identify that emissions are unequally distributed. Chancel and Piketty go on to identify that the richest in the World represent these 10% of population / 45% of emissions emitters (*"if you get on a plane once or twice a year, then we're definitely in that category"* Professor Kevin Anderson, *Your Manchester Insights: Climate Change – January 2018* (published 30 January 2018)). This statistic (and their report generally) illustrates the imperative need for a progressive (increasing in proportion to emissions) carbon tax in the Isle of Man, coupled with relative investment dividends in renewable energy and energy efficiency interventions in the Isle of Man society. There must be an immediate recycling mechanism from carbon use to investments in renewable energy and energy efficiency schemes to bring to effect a zero carbon future. A further intervention in tandem with a carbon tax should be progressive (increasing in proportion to emissions / use) charging / metering on fossil fuel generated electricity.

Reducing consumption of greenhouse gases will also be assisted by the expeditious switch to an electrified economy. This includes public transport and heating.

The Isle of Man Government should also introduce a strategy / policy to bring about the immediate introduction of the following for all Government and Employees:-

- Video conferencing / telephone conferencing for all non-essential meetings to the United Kingdom / around the World
- One day a week working from home scheme to reduce transport greenhouse gas emissions commuting

A further intervention must be the introduction of maximum CO2 standard for all cars. This maximum CO2 must be subject to a reduction on an annual basis. This standard will apply to all new



cars purchased in and brought over to the Isle of Man. All existing vehicles will be subject to assessment on annual renewal of road tax. In tandem with policies disincentivising private carbon emitting transport, demand for public transport should be incentivised by increased provision of public transport, and, at the same time, a progressive (reducing price annually) reduction in price at point of consumption to free provision. Achievement of that end can (and must) be expedited on a cost efficient transitional basis with immediate roll out of electrified transport in tandem with renewable generation and a suitable charging infrastructure.

17. Should Government consider a finance package to fund home energy efficiency surveys, insulation/draft proofing and installation of heat pumps?

This year, Manx Utilities will be supplying 50 air source heat pumps to customers with the initial costs spread over ten years.

- Strongly agree

18. Should Government consider Grants and Loans for Energy Efficiency improvements and insulation materials for domestic properties?

Most domestic properties can be improved with loft insulation, cavity wall insulation, replacing existing lighting with LEDs, draught proofing, hot water tank insulation and installation of heating controls at a cost of up to £3,000.

Yes – 0% interest loans

Yes – grants capped at a maximum amount?

Yes – grants which contribute to a percentage of the cost of the works?

Yes – grants and loans for landlords

Yes – tax relief

19. Should Government consider Grants and Loans for 'building improvement' in registered buildings and those in conservation areas to tackle damp issues, repair windows and improve energy efficiency?

Owners who live in conservation areas and registered buildings may have to pay for damp issues, window repairs and energy efficiency improvements which are more expensive because of their listed status.

- Strongly agree

20. Should Government allow negotiated Framework Agreements to be used to benefit private sector property owners undertaking home improvements?

This could allow private sector properties to benefit from increased economies of scale and to more cost-effectively install energy efficiency measures.

- Don't Know



21. Should Government consider the introduction of a minimum energy efficiency standard required for renting or selling properties?

In the UK, there is a requirement for any homes in the private rented sector to meet a minimum energy performance rating for new lets and renewals of tenancies. There is also a requirement for any properties for sale in the UK to have an energy performance rating. Most homes can be improved with loft insulation, cavity wall insulation, replacing existing lighting with LEDs, draught proofing, hot water tank insulation and installation of heating controls at a cost of up to £3,000.

Yes – energy performance rating for new build homes

Yes – energy performance rating for existing homes when they are sold

Yes – energy performance rating for existing homes when they are rented out

Yes – energy performance rating for commercial property when it is sold

Yes – energy performance rating for commercial property when it is rented out

22. Should Government consider the introduction of a Manx Standard Assessment Procedure (SAP) rating?

The Standard Assessment Procedure is a methodology used to assess and compare the energy and environmental performance of dwellings. The SAP Calculations establish an energy cost based on the construction of the home, its heating system, internal lighting and any renewable technologies installed.

The SAP number can give people an easy indication of how energy efficient a building is, similar to how we display the efficiency rating of an appliance such a washing machine. 0 SAP point = extremely inefficient. 100+ SAP points = the most efficient.

- Strongly agree

23. Should Government consider the introduction of an Energy Efficiency Capital Fund to pay for future energy efficiency improvements in Government buildings?

The return on investment for energy efficiency improvements can be significant over their life span.

- Strongly agree

24. Should Government encourage the construction sector to explore options for increasing the use of locally produced building construction materials i.e. Straw, etc?

- Strongly agree

25. Should Government consider introducing a scrappage scheme for removal of old fridges and freezers?

Annually it costs over £50 to run a fridge or freezer, however, homes are retaining old fridges and freezers for use rather than pay the £15-50 for disposal at civic amenity sites.



- Strongly agree

26. Should Government encourage community renewable energy projects?

- Strongly agree

27. Let us know your comments regarding 'Section 2b: Improving energy efficiency'.

The Isle of Man Government must immediately execute policies for the expeditious introduction of efficiency measures in:-

- Setting minimum standards for Government procurement (e.g. for LED and high efficiency lighting and for high efficiency appliances and utilities), to be increased annually on a progressive scale (improving the standard to be achieved annually)
- Setting minimum standards of energy efficiency for products sold in the Isle of Man, to be increased annually on a progressive scale (improving the standard to be achieved annually)
- Setting minimum standards for energy efficiency and insulation for all new builds, to be increased on a progressive scale (improving the standard to be achieved annually)
- Setting minimum standards for energy efficiency and insulation as a condition of the granting of planning permission on all applications, to be increased on a progressive scale (improving the standard to be achieved annually)
- Setting maximum carbon dioxide standard for all cars (whether new vehicles or existing), to be reduced annually on a progressive scale (i.e. the maximum amount of emissions allowed is reduced on scale year by year)

28. Should Government consider allowing Planning Permitted Development Orders for installation of air source heat pumps in non-conservation areas?

- Strongly agree

29. Should Government consider the introduction of a Climate Change Levy on installation of new fossil fuel boilers?

- Strongly agree

30. Should Government consider phasing out the installation of fossil fuel boilers?

The IPCC report on Climate Change in 2018 recommended that installation of fossil fuel boilers are phased out by 2030. A copy of the report can be viewed at Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C approved by governments.

- Strongly agree

31. Should Government consider introduction of a Climate Change Levy on all domestic and commercial heating fuels based on the carbon intensity of the fuel i.e. heating oil, gas, electricity etc.?



In the UK a Climate Change Levy is charged at the point of supply and is added to all business energy bills.

- Strongly agree

32. Should Government consider phasing out the sale of coal and peat for heating?

- Strongly agree

33. Where possible should Government policy be a preference for heating public sector homes with renewable technologies e.g. heat pumps?

An air source heat pump extracts heat from the outside air in the same way that a fridge extracts heat from its inside. It can get heat from the air even when the temperature is as low as -15°C .

The more energy efficient a heating system is, the cheaper it is to run. Heat pumps are highly energy efficient and deliver around 3 units of heat from every unit of electricity (known as coefficient of performance).

- Strongly agree

34. Should Government reaffirm a commitment and policy for use of biomass woodchip heating and encourage further use in suitable buildings?

Currently, six Government buildings are heated by woodchip boilers using locally sourced biomass material which ensures Government involvement in the supply chain and greater control of the lifetime energy costs for operating the building.

Provided wood is grown sustainably, that is the trees that are harvested for wood fuel are constantly replaced by planting new trees, using wood fuel can be termed renewable energy. That's because while trees are growing, they absorb the same amount of carbon as the burned trees emit.

In the UK, only clean-burning 'ecodesign ready' wood burners/stoves are permitted to be installed.

- Agree

35. Let us know your comments regarding 'Section 2c: Substituting fossil fuels with sustainable alternatives'.

Only 25% of emissions in the Isle of Man are emitted from electricity generation. That means that 75% of emissions are being produced that will need to be addressed beyond replacing the CCGT Pulrose power station with renewable electricity generation. This is essential but to achieve the urgent object of decarbonising our society, strategies must be immediately introduced to decarbonise the economy and change land use practices to zero greenhouse gas emitting actions.

The Isle of Man Government should introduce a carbon tax. This disincentive should be balanced with a relative programme of financial incentives and support for the immediate and expeditious



adoption of renewable electricity generation and the electrification of the Isle of Man society (including the electrification of heating and immediate introduction of energy efficiency schemes).

The Isle of Man Government should immediately introduce policies / strategies to mandate that any new builds must include renewable energy generation (e.g. pv solar panels) and electrified heating (e.g. heat pumps and solar thermal heating). Furthermore, policies / strategies should be immediately introduced to condition any planning approval on existing builds with a decarbonisation of generation / use and retrofitting to improve efficiency.

All Isle of Man Government properties should be availed of as a distributed generation platform for solar power generation. Furthermore, strategies for the retrofitting of electrified fuelled heating in Isle of Man Government properties should be immediately be implemented.

Distributed community renewable generation schemes should be identified as tools to bring about a zero-carbon future. Currently the Isle of Man Electricity Act 1996 precludes this. The Isle of Man Government should immediately prepare a proposal to Tynwald for the amendment to this Act for the regulated adoption of community based renewable generation schemes that can incentivise communities to produce and supply renewable energy to expedite the transition to a zero carbon future.

In respect of the response to question 29, the sentiment of this response is that any new fossil fuel boilers should immediately incur penalties to disincentivise their adoption. However, the reality of the situation is that no new fossil fuel boilers should be adopted and the Isle of Man Government should be immediately implementing policies to bring this end to effect. This technology is disproportionately contributing to Isle of Man emissions (up to 30% of emissions are from building use that includes fossil fuel heating).

In respect of the response to question 30, the Isle of Man Government should immediately end the adoption of fossil fuel boilers in the Isle of Man. This technology is disproportionately contributing to Isle of Man emissions (up to 30% of emissions are from building use that includes fossil fuel heating).

In respect of question 34, although wood chipping / biomass represents a 'renewable' energy generation it is still emitting greenhouse gases in the wider and particulates in the immediate environment. The costs of scaling the technology are disproportionate to any returns and the Isle of Man Government should immediately invest in the electrification of heating in the Isle of Man and the sources of energy of:-

- solar pv panels
- onshore wind generation
- tidal and wave generation

36. To facilitate the change to electric vehicles (EV) should Government consider providing Grants and Loans for EV charging points?



The uptake of electric vehicles (EVs) is anticipated to accelerate as manufacturers switch investment from fossil fuel combustion engines to zero-emission vehicles. There are currently over 200 electric vehicles registered on the Island.

Yes – 0% loans

Yes – grants

37. Should Government consider Grants and Loans for purchase of new electric vehicles?

The up-take of electric vehicles (EVs) is anticipated to accelerate as manufacturers switch investment from fossil fuel combustion engines to zero-emission vehicles. There are currently over 200 electric vehicles and 400 hybrids registered on the Island. In the UK a maximum grant of £3,500 is available to assist with the purchase of electric cars.

Yes – 0% loans

Yes – grants

38. Should Government consider a scrappage scheme for petrol and diesel vehicles to encourage their removal from the roads?

In the UK there has been a vehicle scrappage scheme providing a £1,000 payment towards the purchase of a new car.

Strongly agree

39. Should Government consider phasing out the sale of new petrol and diesel cars?

Britain is to ban the sale of all new diesel and petrol cars and vans from 2040.

- Strongly agree

40. Should Government consider an increased new vehicle registration fee for petrol and diesel cars?

- Strongly agree

41. Should Government explore the feasibility of a supplement on the Road Tax for petrol and diesel vehicles?

- strongly agree

42. Should Government consider the introduction of a vehicle emission test to clean up the most polluting vehicles on the road?

In the UK, a vehicle cannot get an MOT certificate if exhaust emissions are too high.

- Strongly agree

43. Should Government specify that only heavy goods vehicles (HGVs) using energy efficient engines (i.e. Euro5 or Euro6) can be used in Government work?



- strongly agree

44. Should Government encourage employers to provide a company electric vehicle scheme?

A company electric vehicle scheme is available which allows employees on the Isle of Man to benefit from exchanging some of their salary in return for an electric vehicle.

- Strongly agree

45. Should Government encourage trials in public transport such as the use of zero-emission buses (hydrogen, electric etc)?

- Strongly agree

46. Should Government trial a free-for-all bus service to reduce traffic congestion?

- strongly agree

47. Should Government explore opportunities in HGVs and ferries for zero emission transport e.g. hydrogen and biogas?

- Strongly agree

48. Should Government explore options for recycling electric vehicle batteries on Island including use as energy storage by Manx Utilities?

When electric cars reach the end of their life there could be opportunities for repurposing valuable batteries.

Potential applications include electricity storage in combination with renewables, to provide commercial grid-balancing services, and to support vehicle charging in remote locations

Materials recycling may be important in the longer term, as the stockpile of batteries requiring disposal increases. The risk of cobalt shortages has been identified as a major threat to global EV growth.

- Strongly agree

49. Should Government consider introducing a lower commercial electric vehicle tariff?

Currently Manx Utilities only offer a lower domestic electric vehicle tariff for off-peak charging.

- Strongly agree

50. Let us know your comments regarding 'Section 3: Transport'.

Around 15% of annual Isle of Man emissions come from surface transport (not factoring in the greenhouse gases emitted in vehicle production and transport to the Isle of Man). As a result, the transition to a decarbonised transport system must commence immediately and at rapid scale. It will involve both supply and demand side intervention.



As Professor Kevin Anderson has stated, *“There is a very clear message – if we are serious about Paris (Accord on Climate Change) we have to reduce the demand for transport too.”*

As a society we must holistically engage with why we move and, as a result, how we can move so as to maximise low and zero carbon opportunities.

Having 60,000 light vehicles (99% of which will be diesel or petrol fuelled) for a population of 83,314 is close to nearly 1 vehicle per resident after removing those not eligible to drive on public roads for being under 16 (c.15,000 residents). Conceiving that we can simply transition to 60,000 electric vehicles is flawed logic and would require huge greenhouse gas emissions in the production and distribution of these vehicles. We must immediately introduce policies to decarbonise this transport system to reduce our greenhouse gas emitting current system and maximise the expeditious transformation to a low carbon system without huge emission costs. The Isle of Man Government should introduce:-

- Any new vehicle procurement by the Isle of Man government must be electric powered vehicles
- An immediate increase in the investment into the infrastructure of electric vehicle charging
- An incrementally increasing road tax for all petrol and diesel vehicles, increasing each year on a progressive (in proportion to emissions) scale. This standard will apply to all new cars purchased in and brought over to the Isle of Man.
- Maximum CO2 standard for all cars, decreasing each year on a progressive (in proportion to emissions) scale. This maximum CO2 must be subject to progressive reduction on an annual basis for cars registered for road tax (whether new or existing).
- Immediate investment in the provision of very low emission electric buses
- The reduction of the price of public transport at the point of use on a progressive expeditious scale to ultimately free provision.
- An immediate increase in the provision of public transport to incentivise and bring to effect the immediate reduction in fossil fuel powered private transport
- Introduce cycle / run / walk only routes to the main employment centres and schools, especially in respect of providing routes for those living in or on the outskirts of Douglas into the central business district
- Introduce speed limits for cars / vehicle transport to benefit the comfort of cyclists in cycle routes to the main employment centres and schools

In respect of question 39, the Isle of Man Government must immediately introduce policies in terms of the below to stop the sale and use of petrol and diesel vehicles well before 2040. See the response to question 65 in terms of the timeline this should be aligned with.

51. Should Government consider legislation changes to allow community energy projects to generate and supply power?

The Manx Utilities provide a sustainable generation tariff open to all domestic and commercial customers who wish to install their own renewable energy generation systems and export surplus power back to the network. Currently, the Electricity Act only allows Manx Utilities to be the provider of electricity to customers.



- Strongly agree

52. In addition to providing electricity should Manx Utilities consider developing a business model that provides energy services for customers i.e. providing a broad range of energy services including designs and implementation of energy savings projects, retrofitting and energy conservation?

- Strongly agree

53. Should Manx Utilities explore options to install renewables before 2030s?

Reducing emissions in the power sector is expected to occur in the mid-2030s when existing fossil fuel generation is decommissioned. The cost to replace the existing power plant or import electricity using additional cables is likely to require several hundred million pounds of investment.

- Strongly agree

54. Should Manx Utilities consider installing solar photovoltaic panels and battery storage at their sites around the Island?

- Strongly agree

55. Would you support onshore wind generation in the Isle of Man?

Onshore wind is one of the most cost-effective renewable energy sources available and wind turbines are found widely installed around the British Isles. The Isle of Man is fortunate to have a significant wind resource which could be used for onshore wind generation.

- Strongly agree

56. Would you be supportive of onshore wind generation if you could see the wind turbines from your home?

- Strongly agree

57. Let us know your comments regarding 'Section 4: Electricity generation'.

Only 25% of emissions in the Isle of Man are emitted from electricity generation. That means that 75% of emissions are being produced that will need to be addressed beyond replacing the CCGT Pulrose gas power station with renewable electricity generation. This switch for our existing electricity generation to renewable energy sources is paramount and must be commenced without further delay. However, we still need to dramatically increase our renewable electricity generation to compensate for the current fossil fuel emissions from surface transport, heating, and commercial and industrial uses.

The Isle of Man Government must immediately invest in the expansion of renewable energy supply by:-



- Investing in onshore wind turbines (amongst other sources such as tidal and wave technology) for the Isle of Man for scale production of renewable energy sources
- Introducing planning policies for any new build requiring it to have renewable generation of electricity (e.g. pv solar panels)
- Introducing conditions to planning policy for existing builds seeking consent to development to have renewable generation of electricity (e.g. pv solar panels)
- Increasing the incentivise of feed in tariffs to Isle of Man residents selling back to the grid from renewable energy generation
- Introducing a carbon tax to progressively disincentivise (on an annually increasing scale) the demand for fossil fuel sources of heating (e.g. gas and oil)
- Introducing relative financial support for Isle of Man residents to invest in renewable energy generation in the Isle of Man
- Immediately prepare a proposal to Tynwald for the amendment to the Electricity Act 1996 for the regulated adoption of community based renewable generation schemes that can incentivise communities to produce and supply renewable energy to expedite the transition to a zero-carbon future.
- Immediately implementing and investing into a strategy to manage grid-storage across the Isle of Man society to expediently manage the intermittency of generation (and therefore supply) from renewable energy sources

58. Should Government explore options to further reduce emissions from Agriculture and Land Use?

DEFA is currently consulting on an Agriculture Strategy which is intended to increase sustainability in farming practices in the Isle of Man.

- Strongly agree

59. Should Government explore options to further reduce emissions from waste?

Government wants to encourage a reduction in the amount of waste produced per head of population.

(a) utilise waste heat from the Energy from Waste (EfW) plant to replace a fossil fuel heat source?

Strongly agree

(b) use biomass to prevent unplanned shut downs at the EfW plant?

Disagree

(c) reduce the carbon miles per tonne of residual waste collected for disposal to the EfW?

Strongly agree

(d) compulsory site waste management plans for building construction, demolition and refurbishments?



Strongly agree

(e) increase the amount of materials recovered from the residual waste stream for recycling?

Strongly agree

61. Should Government encourage carbon capture and storage e.g. in peatlands?

We are fortunate in having peatlands on the island, many of which are owned by DEFA and Manx Utilities.

- Strongly agree

62. Should Government encourage a reduction in the imports of artificial fertilisers and more efficient use of organic fertilisers and leguminous plants such as clover?

- Strongly agree

63. Let us know your comments regarding 'Section 5: Land use and waste'.

Land Use

The 2018 report by the National Atmospheric Emissions Inventory entitled *Mapping Carbon Emissions & Removals for the Land Use, Land Use Change & Forestry Sector* identified converting land to forestland was 3x more potent at removing carbon dioxide from the atmosphere than any other land use. Furthermore, the report showed agricultural use and property development massively increased the greenhouse gas emissions of the land use. To further increase the carbon sequester opportunities in the Isle of Man, the Isle of Man Government must immediately introduce a policy of increasing woodland and hedgerow management in the Isle of Man, and restoring peatlands.

To achieve the biggest cuts in emissions in the agricultural sector people's dietary habits need to change, as less red meat and dairy consumption would mean fewer livestock and fewer emissions of methane and nitrous oxide from livestock digestion, manure and fodder production (Dr Amanda Thomson, LULUCF GHG Inventory Lead Scientist). The impact that a reduction in animal product consumption vis a vis greenhouse gas emissions was further illustrated in *Behavioural Climate Change Mitigation Options and Their Appropriate Inclusion in Quantitative Longer Term Policy Scenarios* (2012) European Commission, and *The Potential of Behavioural Change for Climate Change Mitigation: A Case Study for the European Union* (2018) Dirk-Jan van de Ven et al.

Therefore, demand for animal products must be curtailed in tandem with supply of alternatives. The Isle of Man Government must immediately implement policies to reduce the societal consumption of animal products in the Isle of Man without further delay. Not only can the Isle of Man Government effect this end through education and public awareness policies but it should also immediately roll out the United Nations proposal to have one meat free day a week in schools and government canteens. Policies to address / reduce food waste are also a fundamental tool in ultimately reducing carbon dioxide emissions from agriculture use. The Isle of Man Government should introduce a strategy / policy for the immediate increase in community level micro-production of fruits and vegetables in the Isle of Man.



Waste

On a global level, per capita consumption in the Isle of Man has a material impact on global emissions which are not captured in the Isle of Man Government statistics for emissions as the vast majority of products consumed in the Isle of Man are not produced in the Isle of Man. This is known as 'offshoring' emissions that are not captured in current audits. Therefore, to be responsible global citizens with regards to greenhouse gas emissions requires judicious decision making as to what to consume (i.e. following a preference of low greenhouse gas emitting substitutes) or to reduce consumption altogether (as the case may be).

On the demand side, we should be intervening in our society to optimise low consumption. For example, provision of plastic bottles should be immediately reduced. This can be achieved by introducing a wide distribution of water fountains (for example at the airport) and curtailing the provision of plastic bottles on Isle of Man Government properties. The Isle of Man Government should support the reduction in supply with an education programme to inform residents of the material impact personal consumption has on greenhouse gas emissions when scaled to the societal level. Although plant-based materials have some application in our future vision of society it should not be considered to be an opportunity for like-for-like substitution with plastic products, whereas the optimum intervention is the immediate reduction of consumption for the expeditious reduction in greenhouse gas emissions. The Isle of Man Government should introduce a strategy / policy for the immediate increase in community level composting to supply community level micro-production of fruits and vegetables in the Isle of Man.

The lower levels of consumption proposed will elicit a waste reduction. This will benefit with a reduction in greenhouse gas emissions as not only are emissions reduced at the production side but also at the burning of waste / disposal of waste side.

64. Should Government consider using the proposed interim targets?

No

65. Let us know your comments regarding 'Section 6: Interim Targets'.

"Nature never deceives us. It is always we who deceive ourselves." (Emilie, or on Education – Jean Jacques Rousseau).

Interim 2025 Targets

3,000 registered or third-party leased electric vehicles

There are c.60,000 cars in the Isle of Man emitting c.15% of Isle of Man calculating emissions. To reduce that level by 5% by 2025 will not be satisfactory. In any event, the solution to surface transport emissions will not be solved by switching 60,000 petrol / diesel vehicles to 60,000 electric vehicles. The Isle of Man public transport system must be immediately decarbonised and increased to supplant private petrol / diesel vehicle use. An annually increasing target of electric bus use should be set to incentive Isle of Man provision of decarbonised public transport.

3,000 installed heat pumps – both air and ground source



There are c.42,000 dwellings in the Isle of Man. 3,000 installed heat pumps by 2025 will not be satisfactory as it represents on c.7% of residential properties (that does not account for commercial / industrial properties). This measure does not take seriously the impending global climate crisis. Building use (predominately heating) represents nearly 30% of calculated greenhouse gas emissions in the Isle of Man. The proposal by 2025 would only reduce this by 2.1% over six years (assuming decarbonised electrification). To intervene to reduce the reliance on (and therefore emissions from) fossil fuel heating (e.g. gas and oil) will require the immediate introduction of heat pumps as a means of reducing greenhouse gas emissions from the heating process. Further measures should be a target for solar thermal heating adoption in the Isle of Man.

2,000 electric storage heating customers

There are c.42,000 dwellings in the Isle of Man. 2,000 electric storage heating customers by 2025 will not be satisfactory as it represents on c.5% of residential properties (that does not account for commercial / industrial properties). This measure does not take seriously the impending global climate crisis. Building use (predominately heating) represents nearly 30% of calculated greenhouse gas emissions in the Isle of Man. The proposal by 2025 would only reduce this by 1.5% over six years (assuming decarbonised electrification). To intervene to reduce the reliance on (and therefore emissions from) fossil fuel heating (e.g. gas and oil) will require the immediate introduction of low carbon heating solutions on scale.

annual emissions reduction of 100,000 tonnes by 2025 compared to the peak emissions in 2008

This target is not fit for purpose as it does not reflect the pressing urgency in the need for the Isle of Man to reduce its greenhouse gas footprint on the World. 2008 emissions were c.880 thousands of tonnes of carbon dioxide. By 2014 that had fallen by 800 thousands of tonnes of carbon dioxide. This is only a difference of 20,000 tonnes over a period of 11 years. By using 2008 as the base line the Isle of Man Government will be delaying meaningful and crucial action on engaging with the problem of our greenhouse gas impact upon the World.

To avoid global warming of 2 degrees, if we remove the assumptions placed upon negative emission technologies (beyond trees, this represents technologies invented to attempt to suck greenhouse gases out the atmosphere – this technology is not proven on the microlevel let alone at the scale necessary to bring its vision to effect), and assume the following:-

- non-OECD countries (the World's poorer countries) peak their carbon dioxide by the early 2020s
- the non-OECD countries ramp up mitigation of carbon dioxide emissions to 10% per annum by the early 2040s
- fully decarbonise by the early 2050s

The Isle of Man will need to reduce emissions by 13% per year, meaning a fully decarbonised energy system by 2035-2040 (that means planes, ships, refrigerators, cars, industry etc).

13% per annum represents, at year one (i.e. by 2020):-



- For an estimate of c.10 tonnes of carbon dioxide per person (representing carbon dioxide emissions produced in the Isle of Man), a reduction of c.108,000 tonnes of carbon dioxide by 2020
- For an estimate of c.15 tonnes of carbon dioxide per person (representing carbon dioxide emissions consumed in the Isle of Man – i.e. factoring in ‘offshored’ carbon dioxide emissions), a reduction of c.162,000 tonnes of carbon dioxide by 2020

If the Isle of Man Government wishes to take the challenge before the Isle of Man and the global society seriously, it must conceive and immediately implement efficacious policies to bring to effect a favourable resolution vis a vis the challenge. This requires honestly accepting the challenge before it.

Interim 2030 Targets

10,000 registered or third-party leased electric vehicles

There are c.60,000 cars in the Isle of Man emitting c.15% of Isle of Man calculating emissions. To reduce that level by 10% by 2030 will not be satisfactory. In any event, the solution to surface transport emissions will not be solved by switching 60,000 petrol / diesel vehicles to electric vehicles. The Isle of Man public transport system must be immediately decarbonised and increased to supplant private petrol / diesel vehicle use. An annually increasing target of electric bus use should be set to incentive Isle of Man provision of decarbonised public transport.

5,700 installed heat pumps – both air and ground source

There are c.42,000 dwellings in the Isle of Man. 5,700 installed heat pumps by 2030 will not be satisfactory as it represents on c.13.5% of residential properties (that does not account for commercial / industrial properties). This measure does not take seriously the impending global climate crisis. Building use (predominately heating) represents nearly 30% of calculated greenhouse gas emissions in the Isle of Man. The proposal by 2030 would only reduce this by c.4% over six years (assuming decarbonised electrification). To intervene to reduce the reliance on (and therefore emissions from) fossil fuel heating (e.g. gas and oil) will require the immediate introduction of heat pumps as a means of reducing greenhouse gas emissions from the heating process. Further measures should be a target for solar thermal heating adoption in the Isle of Man.

3,700 electric storage heating customers

There are c.42,000 dwellings in the Isle of Man. 3,700 electric storage heating customers by 2030 will not be satisfactory as it represents only c.8.8% of residential properties (that does not account for commercial / industrial properties). This measure does not take seriously the impending global climate crisis. Building use (predominately heating) represents nearly 30% of calculated greenhouse gas emissions in the Isle of Man. The proposal by 2030 would only reduce this by 2.64% over 11 years (assuming decarbonised electrification). To intervene to reduce the reliance on (and therefore emissions from) fossil fuel heating (e.g. gas and oil) will require the immediate introduction of low carbon heating solutions on scale.

30 MWe installed renewable electricity generation



This target is not fit for purpose. It only represents c.33.33% of current electricity generation. Electricity generation is only 25% of the total emissions mix for emissions produced in the Isle of Man. Therefore, this target only represents an 8.3% reduction in emissions by 2030 (11 years' time).

If we are to avoid 2 degrees of warming as a global civilisation, the Isle of Man will need to reduce emissions by 13% per year. For electricity generation, that will be transferring generation to renewable sources of electricity by 2020 in the amount of 11.7MW built in capacity (or c.50GWH production over a year). Clearly however for a sustainable future that avoids 2 degrees of warming we must rapidly increase our renewable energy generation to supplant fossil fuel sources of energy (that formerly provided for heating etc). This will require a dramatically more aspirational goal by 2030.

average Standard Assessment Procedure (SAP) rating of 65 for private sector homes

annual emissions reduction of 125,000 tonnes by 2030 compared to the peak emissions in 2008

This target is not fit for purpose as it does not reflect the pressing urgency in the need for the Isle of Man to reduce its greenhouse gas footprint on the World. 2008 emissions were c.880 thousands of tonnes of carbon dioxide. By 2014 that had fallen by 800 thousands of tonnes of carbon dioxide. This is only a difference of 45,000 tonnes over a period of 16 years. By using 2008 as the base line the Isle of Man Government will be delaying meaningful and crucial action on engaging with the problem of our greenhouse gas impact upon the World.

If we remove the assumptions placed upon negative emission technologies (beyond trees, this represents technologies invented to attempt to suck greenhouse gases out the atmosphere – this technology is not proven on the microlevel let alone at the scale necessary to bring its vision to effect), and assume the following:-

- non-OECD countries (the World's poorer countries) peak their carbon dioxide by the early 2020s
- the non-OECD countries ramp up mitigation of carbon dioxide emissions to 10% per annum by the early 2040s
- fully decarbonise by the early 2050s

The Isle of Man will need to reduce emissions by 13% per year, meaning a fully decarbonised energy system by 2035-2040 (that means planes, ships, refrigerators, cars, industry etc).

13% per annum represents, at year one (i.e. by 2020):-

- For an estimate of c.10 tonnes of carbon dioxide per person (representing carbon dioxide emissions produced in the Isle of Man), a reduction of c.108,000 tonnes of carbon dioxide by 2020
- For an estimate of c.15 tonnes of carbon dioxide per person (representing carbon dioxide emissions consumed in the Isle of Man – i.e. factoring in 'offshored' carbon dioxide emissions), a reduction of c.162,000 tonnes of carbon dioxide by 2020

If the Isle of Man Government wishes to take the challenge before the Isle of Man and the global society seriously, it must conceive and immediately implement efficacious policies to bring to effect



a favourable resolution vis a vis the challenge. This requires honestly accepting the challenge before it.

66. If the Island needed more money to fund climate change mitigation initiatives, which of the following do you think you would be prepared to accept?

Yes - Pay through energy bills / Climate Change Levy.

Yes - Pay more through a separate tax that would go directly to funding climate change mitigation initiatives.

Yes - Pay more through the taxes I currently pay.

67. How much would you be willing to spend annually from your household income on energy efficiency?

>5%

68. Please provide details of other suggestions for how the Isle of Man could reduce greenhouse gas emissions?

The IPCC report on Climate Change in 2018 found that limiting global warming to 1.5°C would require “rapid and far-reaching” transitions in land, energy, industry, buildings, transport, and cities. Global net human-caused emissions of carbon dioxide would need to fall by about 45 per cent from 2010 levels by 2030, reaching ‘net zero’ around 2050.

Tynwald agreed on a Climate Change Mitigation Strategy in 2016, outlining steps towards the 2050 target to reduce greenhouse gas emissions by 80% compared to 1990 levels. This is a challenging target and total greenhouse gas emissions from electricity generation, buildings and surface transport will need to be close to zero by 2050. However, to meet the latest IPCC report it will be necessary for the Isle of Man to further reduce emissions and reach ‘net zero’ around 2050.

The 2015 Paris Agreement on climate change called for an equitable global transition to a zero carbon future. As a wealthy nation with a disproportionate per capita impact on global greenhouse gas emissions, the Isle of Man must seek to fully decarbonise by 2035-2040 (that means planes, ships, refrigerators, cars, industry etc). This target will require immediate intervention on the demand and supply sides.

The Isle of Man Government is referred to the foregoing proposals identified herein for actions that should be taken to reach the identified target. Notably, this will require:-

- Introducing and markedly increasing renewable energy generation of electricity
- Increasing and electrifying public transport provision
- Reducing per capita consumption
- Reducing the consumption of animal products
- Introducing and markedly increasing electrification of heating for Isle of Man dwellings

69. Let us know your comments regarding 'Section 7: Funding and other suggestions'.



A carbon tax and road tax duties should immediately be directed to transfer greenhouse gas excesses into renewable energy investments, energy efficiency schemes and low carbon transport interventions.

In order to bring to effect a zero carbon future we must invest heavily into the electrification and increased distribution of public transport. The costs of public transport should (and will easily) be supplied by a progressive (increasing in proportion to emissions) road tax.

The carbon tax should elicit a relative dividend in the Isle of Man economy of investments / loans / grants / education in renewable energy production, grid storage and energy efficiency schemes.