



Isle of Man Government

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Council of Ministers

Isle of Man Government Action Plan for Achieving Net Zero Emissions by 2050

Phase 1

January 2020

Chief Minister's Foreword

The last year has seen an unprecedented change in public understanding of the implications of the global climate and ecological emergency. It is increasingly clear that unless urgent action is taken on a global scale, the consequences of climate change and the decline in ecosystem health and biodiversity will be devastating.

I am committed to intergenerational equity and leaving a responsible legacy to future generations. In May 2019 I recognised the climate emergency and made a commitment for the Isle of Man to reach net zero carbon emissions by 2050, in line with scientific advice from the International Panel on Climate Change. I also recognised the need for this target to be recognised in law, and made a further commitment to bringing a climate change bill to Tynwald in 2020.

To achieve net zero carbon emissions by 2050 will require a fundamental change in the way we live on the Isle of Man. It will change the way we source our energy, how we heat our homes, how we travel and many other choices we make in our day-to-day lives. If we invest now in this transition, we can maximise the benefits to our community and minimise the impacts, especially on the most vulnerable people in our society. An important part of planning for a net zero future is ensuring that we lead a fair transition. With a good understanding of the impacts of the proposed actions, we will be able to ensure a programme of work that not only achieves the reduction in emissions required, but leaves no-one behind.

As an island we are particularly aware of the local and global impact of climate change on communities like our own, and of the social and environmental imperative to play our part. The global community is increasingly recognising the importance of utilising our natural environment to help reduce the impacts of climate change and provide people with a wide range of benefits. As a UNESCO Biosphere Reserve we are proud to be part of a global network of communities striving to protect their special environment, whilst maintaining a thriving economy. As part of this network we have the opportunity to take global leadership in the environmental challenges of today and we are well-placed to take the lead in putting natural carbon capture at the heart of our response to climate change.

This government action plan is the critical first phase of the programme that will take us to net zero emissions, and represents a bold step forward along the Isle of Man's path to a zero emission future. In this plan, we commit to a range of important actions that will immediately start to impact on our emissions and our capacity to store carbon in our landscape and sea. We embrace the ambition and rigour of James Curran's report and we commit to accelerating the work he proposes to further understand the opportunities and challenges around delivering net zero, and to provide more evidence on how this plan can be delivered effectively.

In this action plan we commit to bringing together our whole community to find solutions to the greatest threat humanity has yet faced and to building opportunities and a positive future for all. Now is the time for us to act together, to do the right thing and to make the generations that follow us proud of what we were able to achieve.

Hon Howard Quayle MHK Chief Minister

Introduction

It is now widely acknowledged that climate change poses a significant global threat and is already impacting on the world around us. The challenge to limit future temperature increases, together with the need for a unified response to protect and restore our ecosystems and biodiversity, will require consistent and transformative changes if we are to protect our planet for future generations.

Knowledge and awareness of the enormity of these challenges are now growing rapidly, highlighted through recommendations of the United Nations' Inter-governmental Panel on Climate Change (IPCC) and at the Conferences of the Parties to the United Nations Convention on Climate Change, most recently in Madrid in December 2019.

In May 2019 the Chief Minister recognised the climate change emergency that is facing the planet, and committed to act on it, announcing his intention to bring forward a Climate Change Bill to commit the current and future governments to reach net-zero carbon emissions by 2050, in line with the recommendations of the United Nations' Inter-governmental Panel on Climate Change.

In June 2019, Tynwald unanimously supported the Chief Minister's announcement when it made a commitment for immediate action, and called on Council of Ministers to set up a dedicated climate emergency transformation team, led by an independent Chair, to develop a climate change action plan.

Professor James Curran was appointed as the Independent Chair of the Climate Emergency Transformation Consultative Team in July 2019. Professor Curran has prepared an independent report recommending ambitious and challenging targets for the Isle of Man Government to consider, with technical assistance from the Climate Change Analytical Team. This team, made up of officers from a number of government departments, began work in August 2019 and produced over 30 detailed technical appendices to provide the evidence base for Professor Curran's report.

Current Position

The Council of Ministers thanks Professor Curran for his report, and is grateful for the work he and the Climate Emergency Consultative Transformation Team have undertaken to inform its action plan. In particular they would like to highlight the speed with which the work was undertaken, to meet the deadlines set down in the Tynwald motion.

The Council of Ministers presents its Phase 1 action plan that identifies actions for immediate implementation for the forthcoming 12 months, and commits to gathering further evidence to implement an ambitious programme of actions in the longer term.

A Climate Change Transformation Programme will be established to lead the delivery of these actions and determine more robust costs as recommended by Professor Curran. This programme will also consider the funding options available and of any actions taken that may impact the Island's environment, communities, or economy.

The Council of Ministers is committed to being progressive whilst ensuring it is pragmatic and sensible in its response to climate change. Its focus will be on ensuring the sustainability of the Island, Biosphere and its way of life.

Input from all areas of the community will be necessary in considering the long term actions and changes required. Working in partnership with business and industry will be vital in the transition to a net zero economy.

Importantly, the Council of Ministers believe that further work is essential to ensure that the actions are balanced and fair to all and that the transition to net zero carbon emissions is not to the detriment of the most vulnerable members of society.

The Isle of Man will need to take rapid action if it is to achieve its target of net zero carbon emissions by 2050. It is important that options are kept open and to take advantage of any future developing technologies. Implications for all aspects of the Island's infrastructure and how fundamental changes are made in order to reach net zero carbon emissions must be considered.

The effective protection and restoration of the diverse ecosystems that make up the countryside and territorial sea can reduce emissions and increase capacity to capture carbon in our natural environment. This approach, known as nature-based solutions, is increasingly acknowledged as an essential tool in the global effort to minimise the impact of climate change, and the Isle of Man is well placed to become a leading example in this area.

Whilst not in the scope of this report, adaptation to climate change (changing the way we live in response to climate impacts) is the parallel challenge to climate change mitigation (reducing the greenhouse gases in the atmosphere). The same nature based solutions that can capture and store carbon and reduce global greenhouse gas levels can also make an important contribution to adaptation, for example forests and wetlands providing natural flood risk management and healthy kelp forests protecting our coasts from increased erosion associated with sea-level rise and increased storminess.

This high level action plan includes the creation of an awareness and engagement programme, which will ensure that everyone understands the challenges ahead and has access to the information and resources required to take the necessary action.

The Isle of Man Government Phase 1 Action Plan

The Isle of Man Government is committed to achieving net zero carbon emissions by 2050. It acknowledges the scope and ambition of Professor Curran's report, and also the principles which underpinned the work. For example, a no-regret approach (that is, avoiding decisions which prevent future options) is essential, ensuring that key options are kept open, so that new technology can be utilised as and when it becomes available.

Specifically, the Council of Ministers embraces 10 policy commitments to inform its next steps, and commits to undertake a first phase of immediate actions to reduce emissions and increase natural carbon capture. In parallel, Council of Ministers also makes a commitment to undertaking over the next year an in-depth analysis of the pathways to net zero outlined in Professor Curran's report. This analysis will include a detailed carbon impact assessment, full assessment of costs, modelling of scenarios and consideration of the wider impacts of emission reduction measures on society, the economy, and in particular the most vulnerable members of our community. This analysis is in line with Professor Curran's recommendation and will therefore inform the next phase of the plan that the Council of Ministers will bring to Tynwald in 2021.

Climate change action plan funding

As Professor Curran identifies in his report, there is a great deal of work required to understand more effectively the costs of delivering a zero carbon Island, but there is no doubt they will be substantial. Initial funds totalling £10M will be provided in the 2020 Budget to allow immediate actions to be taken and should more be required this can be allocated from the General Reserve, subject to the appropriate approvals and scrutiny.

Clearly significantly more will be required to address this important issue over the coming decades, but this funding will allow the urgent analysis which will determine the cost profiles with greater certainty to be undertaken. It is hoped that we will be in a position to provide more certainty over the funding requirements and funding sources for the 2021 Budget.

It is important to recognise that some of the costs associated with the implementation of the necessary actions will be undertaken by the private sector and recovered through normal charging mechanisms and other actions will have to be supported directly from the public purse. Part of the analysis that will be undertaken will be to assess this in more detail and to provide information on the potential impact on different parts of society to inform the 'just transition' approach recommended by Professor Curran.

The Council of Ministers acknowledges that significant further funding will be required to deliver the action plan and will have to budget accordingly. However, a number of variables come into play when assessing the cost impact of the recommended measures including (critically) timescales and of course the practicalities of delivery (e.g. enough manpower for construction).

If Professor Curran's view that the Island needs to invest £25 m a year of public funds is confirmed by the detailed analysis, then there are a number of mechanisms that are available to secure the funding. These could include taxation, reprioritising existing spending, using reserves and / or borrowing for capital investment.

There must be an acknowledgement that applying any of the mechanisms above will have an impact and it will be necessary to ensure that these are not felt disproportionately on society. It should also be recognised that funding challenges remain for public services, particularly for Health, and this should be borne in mind when considering the application of public investment in this area.

Of course it should also be recognised that tackling climate change will potentially bring economic opportunities for the Island.

In summary, there are a significant number of factors to consider when identifying how much funding is required and how to deliver that in the overall best interests of the Island. With careful analysis and a sturdy impact assessment we can move this forward successfully.

Council of Ministers Climate Change Commitments

The Council of Ministers' new policy commitments are outlined below and the detailed actions within each area are given in Appendix I:

1. Council of Ministers commits to urgently establishing a Climate Change Transformation Programme, with a dedicated fund and a Political Steering Board to develop and deliver Government's climate change action plan.

The action plan presented (at Appendix I) provides a set of commitments that determine a long term approach, and identifies actions to be commenced during 2020/21, as a phase 1 action plan.

To support this work, Treasury will be making available £10 million through a capital and a revenue fund of £5m each, to support the delivery of Phase 1 of this action plan.

2. Council of Ministers commits to Government leading with large scale changes to reduce emissions.

Given the number and scale of the changes that will be required of individuals in order to meet the net-zero challenge, it will be important for Government to visibly demonstrate its commitment, and lead the way in making change. For example, Government buildings to be retro-fitted to ensure energy conservation, that there is an acceleration of the programme of installation of public EV charging points, and that Government's fleet of vehicles (including buses) are low emission, wherever practical.

3. Council of Ministers commits to securing no less than 75% of the Island's electricity from renewable sources by 2035.

Making the transition to renewable energy will be an essential step in our path to net zero carbon emissions. There are a number of possible sources of this energy and a wide range of future energy scenarios that need to be considered and prepared for. The initial actions identified (e.g. the prior information notice (PIN) for up to 20MW of renewable energy) will help accelerate the development of renewable energy whilst informing decision-making on how we source our energy in future.

4. Council of Ministers commits to providing a wide range of incentives, both financial and non-financial, and raising standards to reduce emissions from buildings in the Isle of Man.

One of the most difficult challenges we will face is making the necessary changes to reduce our greatest emissions sector, our residential properties. We will need a mix of low carbon heating solutions and better energy efficiency, in a housing stock that is currently largely reliant on fossil fuel heating and made up of a significant proportion of older properties with low levels of energy efficiency. Acknowledging the possibility of hydrogen-based gas heating in the future, at this stage we will focus on electrifying oil-based systems.

5. Council of Ministers commits to increasing natural carbon capture opportunities, whilst protecting biodiversity and enhancing ecosystems, to help reach net zero by 2050.

As outlined above, we have a great opportunity to protect and enhance our beautiful natural environment to maximise natural carbon storage, minimise emissions and bring a whole range of benefits to people and nature. Our status as the only entire jurisdiction in the world to be designated as a UNESCO Biosphere Reserve celebrates our special biodiversity and its importance to our community and the economy. We will take a strategic and evidence based approach to developing management plans for our land and sea to maximise the potential for carbon sequestration and enhance the essential ecosystems services that nature provides. The restoration of peatlands and the planting of appropriate woodland will be prioritised. Research to understand the potential for blue carbon (carbon captured in our marine ecosystem) will build on our network of Marine Nature Reserves, sustainable fisheries research and other proactive work to manage our marine environment to benefit people and nature and respond to climate change.

6. Council of Ministers commits to achieving net zero carbon emission transport by 2050.

Transport represents a significant element of Isle of Man carbon emissions. A range of options are available to reduce our emissions, including reducing the need to travel, increasing uptake of active travel options (walking and cycling) and public transport, and the replacement of fossil fuel vehicles with electric vehicles or other low carbon alternatives. The actions outlined will build on the excellent work already being done to promote active travel in the Douglas area.

7. Council of Ministers commits to work with our business sector and industries to adapt as market conditions change and to facilitate economic growth in the transition to a net zero carbon economy.

Globally, businesses are becoming increasingly pro-active in climate action as they acknowledge the risks in not doing so. A better understanding of the emissions associated with business and industry is required to inform future climate action. To respond to the pace of change required, government and business must work together to ensure the training and capacity building is in place to ensure our workforce is appropriately skilled and prepared for the changes to come. Most importantly, now is the opportunity to embrace the economic opportunities presented, and to encourage the growth of green businesses and enable innovation.

8. Council of Ministers reconfirms its commitment to bring a Climate Bill into the branches by June 2020.

To ensure effective delivery of our commitment to reach net zero emissions by 2050, it is essential to provide a strong statutory basis for action and change. The Climate Bill will provide that statutory underpinning and will bring us into line with countries around the world in setting statutory targets.

9. Council of Ministers is committed to a full awareness and engagement campaign to enable individuals and organisations to understand and undertake the changes required to achieve net zero.

Reaching net zero emissions will require changes to the way we live. Every member of our community will need to play their part, and to do so they will need to be given the information and the motivation to change. Learning from good practice around the world, we will engage with our community and ensure that everyone understands the importance of responding to climate change and taking the opportunity to create a safer, fairer, brighter future for ourselves and for people around the world.

10. Council of Ministers is committed to further research and analytical work to understand the complexities and impact of Professor Curran's report upon our economy, our environment and fairly across all sectors of our community, reporting to Tynwald with Government's climate change action plan.

Whilst Professor Curran's report is supported by an extensive set of evidence-based appendices, there is still significant analysis required to understand the full implications of his recommendations, and he identifies the need for this work as an initial priority. A full climate impact assessment of the proposals is required, identifying the emission reductions associated with the actions. Further financial analysis is also required to align resources to those actions that will achieve the greatest impacts on our carbon emissions. This will enable us to deliver the best results for our people.

Further Comments

A detailed list of actions aligned to each Council of Ministers Policy Commitment can be found in Appendix I, these set out delivery over the coming months.

Appendix II provides a summary of Evidence Gaps and Further Research Needs on which further work will be undertaken to understand the implications of Professor Curran's report, and inform Government's subsequent Phase 2 plan.

The Council of Ministers will provide a progress report in July 2020, and will bring this second phase of the plan to Tynwald in 2021.

Appendix I – High Level Policy Commitments and Phase 1 Action Plan

1. Council of Ministers is committed to urgently establishing a Climate Change Transformation Programme, with a dedicated fund and a Political Steering Board to develop and deliver Government's climate change action plan.

Ref	Action
1.1	Establish a transformation fund to support activities and action in 2020/21.
1.2	Create a Climate Change Transformation Programme structure, Political Board and reporting and review cycles.
1.3	Create a Climate Change Transformation Programme Team.
1.4	Prepare the Phase 2 action plan for Government, to be presented to Tynwald in 2021.
1.5	Deliver the Phase 1 Action plan, and report to Tynwald on progress in July 2020.

2. Council of Ministers commits to Government leading with large scale changes to reduce emissions.

Ref	Action
2.1	Review Government policies and align with the delivery of the target set for the Isle of Man to achieve net zero carbon by 2050.
2.2	Include performance indicators in the Programme for Government that will monitor and improve the Departments, Boards and Offices individual carbon/greenhouse gases impact.
2.3	Carry out a climate impact audit on Government's estate creating a strategic plan to reduce emissions and maximise opportunities for carbon sequestration.
2.4	Carry out short term actions to reduce the carbon impact of Government's estate, such as implementing LED lighting, biomass boilers, electric space heating wherever possible.
2.5	Create a plan for installing cycle racks (with charging points for electric bikes) and showers in all public buildings, where suitable, and begin implementation.
2.6	Create policy immediately to move the Government fleet to become electric or reduced emission vehicles by default (where practical), with the electrification of the Public service fleet (excluding certain categories of specialist vehicle) to be achieved by 2030.
2.7	Place the order for the first hybrid buses and put in place a programme for wider implementation.
2.8	Fully implement Government's plastics plan and eliminate unnecessary single use plastics and other disposables from Government use.
2.9	Develop and implement a plan to significantly reduce food waste across the Government estate.
2.10	Develop and implement a climate impact assessment to be required as part of all Government procurement processes.
2.11	Encourage mobile working, where possible for Government employees, to reduce travel requirements

3. Council of Ministers commits to securing no less than 75% of the Island's electricity from renewable sources by 2035.

Ref	Action
3.1	Develop a strategic plan for delivering 75% of the Island's electricity from renewable sources by 2035.
3.2	Model the future electricity grid requirements.
3.3	Launch a prior information notice (pre tender) for onshore renewable energy generation up to a maximum capacity of 20MW.
3.4	Launch a prior information notice (pre tender) for an offshore wind farm
3.5	Review MUA practices and the Electricity Act and propose changes to encourage diversified generation.

4. Council of Ministers commits to providing a wide range of incentives, both financial and non-financial, and raising standards to reduce emissions from buildings in the Isle of Man.

Ref	Action
4.1	Build awareness and skills for contractors in energy efficiency and low carbon heating options.
4.2	Develop building controls to assist with meeting climate targets, to include the ban of fossil fuel heating appliances by 2025, in new build properties and set an appropriate date by which to ban the replacement of existing heating appliances with oil-powered models.
4.3	Develop and propose revised support schemes for energy efficiency and space heating to reduce property emissions.
4.4	Establish a new, low electric heating tariff to encourage electrification of heating.

5. Council of Ministers commits to increasing natural carbon capture opportunities, whilst protecting and enhancing ecosystems, to help reach net zero by 2050.

Ref	Action
5.1	Complete the first in a series of peat land restoration projects, restoring a minimum of 1000 acres.
5.2	Complete the first in a series of woodland planting projects with wider ecosystem services benefits (for example natural flood-risk management, biodiversity).
5.3	Plant a woodland (Keyll y Theay) of 85,000 trees at Meary Veg.
5.4	Develop a comprehensive land management plan to maximise carbon sequestration and maintain and restore biodiversity and wider ecosystem services.
5.5	Provide additional incentives for tree planting under the Agricultural Development Scheme and through a dedicated woodland grants scheme.
5.6	Ban all peat cutting.
5.7	Develop a comprehensive blue carbon management plan to maximise carbon sequestration and maintain and restore biodiversity and wider ecosystem services.

5.8	Work in partnership with the Manx National Farmers' Union to consider the active role agriculture can play in increasing carbon sequestration.
5.9	Develop planning advice on maximising carbon sequestration, minimising emissions and maintaining and restoring ecosystem services, and work towards a requirement for biodiversity net gain and for appropriate Sustainable Drainage Systems in future planning policy.

6. Council of Ministers commits to achieving net zero carbon emission transport by 2050.

Ref	Action
6.1	Ensure new Isle of Man Steam Packet Company vessel specification allows transition to alternative, low carbon fuel.
6.2	Develop an Active Travel Strategy in line with Planning Policy for areas outside of Douglas.
6.3	Bring forward a strategy to promote public transport and active travel; considering a package of measures that will be required to change travel behaviour, including vehicle duty orders, car parking charges, planning policies, car sharing and deploying electric charging points in park / ride and park / walk facilities.
6.4	Develop an all-island charging network by 2030; strategically aligning plans for private and public sector provisions (including facilities for high speed charging)
6.5	Announce future road tax requirements.
6.6	Announce end date for registration of fossil-fuelled vehicles.

7. Council of Ministers commits to work with our business sector and industries to adapt as market conditions change and to facilitate economic growth in the transition to a carbon neutral economy.

Ref	Action
7.1	Review of business/industry emissions and options to reduce emissions - in partnership with Chamber of Commerce and other business and industry partners.
7.2	Review of agriculture emissions and options to reduce emissions, in partnership with the Manx National Farmers' Union.
7.3	Publish a re-skilling strategy and action plan for a green economy, to include a further and higher education programme to match skills to future needs.
7.4	Establish a local offsetting scheme to fund Isle of Man carbon sequestration projects, initially to offset personal and business flights.
7.5	Develop a strategy to encourage green technology and innovation on the Isle of Man.
7.6	Investigate opportunities for further business hubs in key locations around the island.
7.7	Develop plans that encourage a climate action and a circular economy by reviewing business support schemes to incentivise climate positive initiatives and discourage climate negative ones.

8. Council of Ministers reconfirms its commitment to bring a Climate Bill into the branches by June 2020

Ref	Action
8.1	Carry out a formal public consultation on the Climate Change Bill.
8.2	Introduce a Climate Change Bill into the Branches by June 2020 that will provide the legal framework to enable the delivery of net zero emissions by 2050.

9. Council of Ministers are committed to a full awareness and engagement campaign to enable individuals and organisations to understand climate change and undertake the changes required to achieve net zero.

Ref	Action
9.1	Develop and implement a public information and engagement campaign; promoting zero carbon actions that individuals, families and businesses can take.
9.2	Create web site with information and resources to inform and inspire action (e.g. energy efficiency tools, business tools).
9.3	Organise community events to provide inspiration, information and advice to enable change.
9.4	Commission independent focus groups to explore and report on public support and capability for change, to inform the phase 2 action plan.
9.5	Raise awareness of climate science and climate action in schools and encourage change.

10. Council of Ministers is committed to further research and analytical work to understand the complexities and impact of Professor Curran's report upon our economy, our environment and across all sectors of our community, reporting to Tynwald with Government's Phase 2 climate change action plan.

Ref	Action
10.1	Complete a comprehensive review and feasibility study on Professor Curran's report - determining more robust costs with an expenditure profile and a clear understanding of the impact on all areas of our economy, our environment and across all sectors of our community
10.2	Carry out further research and analytical work on areas beyond the scope of Professor Curran's report that might provide further options for action for the Isle of Man to achieve net zero by 2050.
10.3	Undertake a comprehensive exercise to understand the funding options available and the social and economic implications of those options.
10.4	Develop a system for setting, reviewing and monitoring carbon targets for Isle of Man emissions, with appropriate advice and validation.
10.5	Carry out further research to fill evidence gaps identified within Professor Curran's and the Analytical Team's reports.
10.6	Develop a strategy for 'just transition' that will enable all sectors of society to make the necessary changes and prevent exclusion or disadvantage through change.

Appendix II: Evidence Gaps and Further Research Needs

The first table provides an overview and indicates the scope and scale of research required to inform the delivery of the targets set within Professor Curran's report.

The second table provides a list of other research that is required that is not covered elsewhere. A more comprehensive list of evidence gaps can be found in Appendix 37 of Professor Curran's report.

Research Area	Research required
Determine more robust costs and expenditure profile.	Expert financial analysis of each action, improving the data available on costings, carrying out appropriate financial modelling and considering interdependencies of actions. Detailed research on options for funding the delivery of the full plan, including scope for implementing new taxes and levies (including a carbon tax), government bonds, determine taxation regulations and opportunities for 'ring-fencing' funds for decarbonisation.
Start peatland restoration.	Full restoration plan requires survey of peatland condition and sources and sinks identified. [Would be included in proposed land management plan].
Start woodland planting.	Further research, planning and assessment is required prior to wide-scale woodland and semi-natural habitat creation to determine the best areas, to avoid negative impacts and ensure long-term viability and climate change resilience.[Would be included in proposed land management plan].
Model future electricity grid requirements.	Detailed modelling of future electricity scenarios.
Provide planning advice on ecosystem service gain.	Research into effective schemes elsewhere and appropriate content for IOM.
Develop a Sustainable Drainage (SuDs) policy.	Research specific carbon sequestration rates for individual SuDS elements relevant to temperate/UK climates.
Publish a re-skilling strategy and action plan for a green economy.	Research net zero pathways and associated skills and support needs.
Introduce a single-use plastics ban.	Quantifying carbon benefits of plastics ban.
Launch domestic energy-efficiency scheme.	Full consideration of costs, benefits and wider social, economic and environmental implications of scheme.
Revise MUA practices to encourage diversified generation – may require legislation.	Assessment of what is required to enable diversified generation and what the implications will be for enabling this.
Call for expressions of interest for provision of onshore wind & solar capacity (150MW & 50MW).	To understand the actual cost of energy for onshore wind in Isle of Man, carry out business appraisal of windfarm sites. Research to understand key environmental issues.
Feasibility + call for expressions of interest in geothermal energy.	Further research into viability of geothermal in the Isle of Man.
Launch time-limited subsidy scheme for electric vehicle purchase	Acknowledging that the market through which we purchase electric vehicles is already subsidised, continue to track the electric vehicle purchase trends in the Isle of Man and if appropriate identify alternative means to stimulate market growth.

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Map habitat connectivity opportunities.	More detailed work on habitat mapping and connectivity opportunities [Would be included in proposed land management plan].
Increase active travel in all locations; strengthen planning guidance.	Research into active travel constraints and opportunities outside the current Douglas-centred work.
Agri development scheme includes agri-forestry, produce diversification, innovation in livestock management, precision agriculture, energy generation, direct marketing to customers.	Feasibility and costing assessments for all/most appropriate options. i.e results based payments, high nature value farming payments.
Climate change in curriculum in schools.	Further research into most effective way to deliver climate science and action education and training of educators.
Promote public transport.	Build on existing work into constraints and opportunities for higher uptake of public transport.
Review Dept for Enterprise business support schemes to promote energy/resource efficiency.	Research into local context and international experience in business incentives.
Enhance blue-carbon assets; deliver a marine management plan.	Full audit of blue carbon capacity and potential. New survey work building on benthic habitat map and analysis of carbon potential.
Launch subsidy scheme to replace oil-fired heating.	Full assessment of options to deliver this in the most cost-effective way.
Circular economy bill.	Research opportunities for circular economy in Manx context and whether this can be enabled through a single Climate Change Bill.
Climate adaptation bill.	Extensive research required on current adaptation, gaps in provision and future needs and whether this can be enabled through a single Climate Change Bill.
Complete grid strengthening and smart grid management, including battery storage	Further research and modelling of future grid requirements and storage opportunities.
Encourage distributed energy generation.	Further work on wider requirements & implications of community generation.
Call for expressions of interest in vehicle charging network.	Research into the most effective approach to vehicle charging, considering private, public and consumer provision and considering wider interdependence and opportunities.
Heat from energy-from-waste (EfW) plant now utilised.	Additional work to understand capacity for this, including calculation of EfW renewable energy based on waste feedstock analysis.
Consider legislation for oil-fuel levy if oil-heated property conversions are stalling, & increase vehicle tax for fossil-fuelled vehicles if progress is slow.	Further research most effective approach to regulating fossil-fuel heating and wider implications in terms of social impacts, commercial implications etc.
Electrification of public vehicles.	Further research required, e.g on leasing possibilities and alternative approaches.
Diesel power station running on biodiesel, or decision to decommission.	Practicalities regarding the introduction of biofuels in the short term to reduce emissions. Wider implications of decommissioning.
Create strategic drop-in business hubs.	Research into most effective approach, market research into interest etc.
Review and decide on feasibility of hydrogen production by hydrolysis.	Results from technical trials in the UK; financial impact assessment of CCGT conversion to hydrogen in £ per kWh. Need to establish optimal mix of renewable electricity generation capacity, hydrogen generation capacity and hydrogen storage capacity.

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Commission biomethane plants for isolated gas grids.	Understanding of biomethane options and opportunities and wider interdependencies.
Decide on recommission or decommission of Pulrose CCGT station:	Extensive research and modelling required, including work on interdependencies, energy security and a wider range of other issues.
After review, call for expressions of interest in tidal generation.	Assessment of generation capacity of tidal range / stream in areas of the island's seabed and advanced hydrographic modelling of specific areas of the IOM tidal stream.
Review and decide on space heating for gas-fired premises: feed hydrogen into main grid, or convert to electrically-powered heating.	Need to establish optimal mix of renewable electricity generation capacity, hydrogen generation capacity and hydrogen storage capacity.
Launch subsidy scheme for gas space heating conversions.	In depth study and scenario modelling to understand benefits and implications of different approaches to replacing gas heating.

Additional research required and not highlighted elsewhere

Addressing the recommendations in the Aether report to improve the quality of emissions measurement and reporting, to provide a more accurate baseline to inform future action.
Well-researched, Manx context information to inform the public website to help individuals and businesses make the right choices in terms of travel and transport, heating, energy efficiency etc (e.g. evidence-based home retrofit advice tailored to Manx traditional buildings and sensitive to heritage/conservation status etc).
Understanding options for higher production and wider variety of vegetable/fruit/cereal production; promote self-sufficiency (this links to wider emissions cutting and to climate change adaptation for the Isle of Man).
Study comparing emissions associated with travelling from the Isle of Man to popular destinations by ferry, air, car and public transport, and identifying the lowest carbon options.
Consider low carbon options for vehicles in fishing and farming, suitable in the Manx context.
Exploring opportunities and challenges for proactively managing mental health in relation to climate change, in a Manx context.
Explore the benefits of the Manx natural environment in wellbeing, in the context of climate anxiety.
Consider approaches to fuel poverty in the context of climate change and reaching net zero.
Assess potential for heat pumps on rivers, sewers and in the sea.
Study of Isle of Man aviation emissions and how they can be reduced.
Study of the emissions implications of hydrocarbon extraction in Manx waters, and the potential impact on reaching net zero.