Appendix 1 – Shetland islands Council's Response to the Draft Scottish Energy Strategy and Just Transition Plan

Chapter 1 – Introduction and Vision

Question 1 – What are your views on the vision set out for 2030 and 2045? Are there any changes you think should be made?

Shetland Islands Council is generally supportive of the vision presented by the Scottish Government in the draft Energy Strategy and Just Transition Plan. We are particularly pleased that Just Transition is a central part of the Scottish Government's thinking as that is completely aligned with the main energy development issues and opportunities in Shetland. Around 700 people are employed in aspects of the oil and gas industry in Shetland within production, logistics and a highly skilled, entrepreneurial island based supply chain. A further 300 are employed from revenues generated from the sector. Our key energy development task is to use the renewable energy resources in and around Shetland to undertake a just transition from oil and gas production using the advanced skills base that exists here. Our response to the questions advise where the Council thinks the document should be amended to address some concerns that we have. The main issues that we have identified are presented in the covering letter from the Council's Leader.

Reduce emissions to net zero – This is the biggest challenge that the human race has faced- a huge proposition at international and national levels impacting right down to local scale. However, such massive change does present us with the opportunity to transition to a fairer more affordable energy system.

Affordable, Resilient and Clean – Fuel poverty remains an all-encompassing core issue in Shetland. Our colder climate and the absence of gas mains means that the cost of heating our homes is more than twice the national average. Despite being at the heart of the national oil and gas industry for over 40 years, all of our hydrocarbon fuel has to be imported. Petrol, diesel and kerosene are therefore more expensive here than on the Scottish mainland. The current national energy crisis is impacting on our society far worse than mainland consumers are experiencing with the average domestic energy bills calculated to be £5,200 in Jan 2023. The Energy Price Guarantee has been extended for a further 3 months to the end of June 2023, when it is set to increase to £3,000 or Ofgem's energy price cap, whichever is lower. Consequently, Shetland's energy transition plans place an emphasis on producing energy in the isles for local use and ending the cost burdens of imported expensive fuels.

Maximising Benefits – Shetland Islands Council has developed and adopted a set of Shetland Energy Development Principles in consultation with local partners and the energy sector which now form the basis for our discussions and negotiations with prospective energy developers.

These principles emphasise:

- Protecting the natural environment and promoting biodiversity;

- Co-existence with other industries such as fisheries for marine energy development;
- Engagement and participation with the local supply chain; and,
- Building fair Community Benefits into all energy development projects from the outset.

The Shetland Energy Development Principles are attached to the Council's response for reference purposes. The Council believes that Community Benefits need to be negotiated between developers and the communities directly affected by energy developments in their area, supported by national guidelines. We are opposed to government negotiations directly with the energy industry at national level for regulated community benefits, which will be regarded by the industry as measures of taxation. In addition any national administration of Community Benefits would become centralised to the disadvantage of the communities actually impacted upon by renewable energy developments.

Achieving the Vision – Shetland is already contributing to the national energy vision at scale and has ambitions to retain our international energy hub status by producing and exporting high volumes of wind, tidal and, eventually, wave generated clean fuel. The Viking Energy onshore wind farm is well underway and will be operational in the early part of 2024, providing 100% green electricity in Shetland for most of the time and giving access to the national grid for the remainder through the new 600MW interconnector to the Scottish Mainland. Around 400 MW can be exported from the Viking project and, together with the other on-island windfarm projects at various stages of development, will provide enough energy to power 500,000 homes in Scotland and the UK. In recent years the Council, in partnership with HIE, the Net Zero Technology Centre, Strathclyde University and the Lerwick Port Authority, have been working on the ORION Clean Energy Project. Link: **www.orioncleanenergy.com** ORION is facilitating an energy future based on producing high volumes of hydrogen and derivative fuels in Shetland from onshore and offshore wind and tidal energy. Using the existing oil and gas production and exporting infrastructure will help drive a development of 2GW of electrolysis by 2035 (300,000t Hydrogen annually) utilising offshore wind resource. Sullom Voe Terminal (SVT) and any additional energy hub developments will have the capacity to process hydrogen and derivative fuels from 30+ GW of offshore wind, subject to effective marine planning processes.

Net Zero - The Council has approved Net Zero Route Maps[1] (Links) for our own operation and for the Shetland community, and is now working on a Climate Change Strategy and a Shetland Energy Strategy as part of a suite of policy documents to achieve net zero in these islands by 2045.

Islands Growth Deal – Shetland is an active participant in the Islands Growth Deal together with Orkney and the Western Isles. The three island groups have formed

[1] What are we doing? – Shetland Islands Council

the Islands Centre for Net Zero to share resources and learning in a joint effort to accelerate the powerful renewable energy assets at our disposal.

Chapter 2 – Preparing for a Just Energy Transition

Question 2. What more can be done to deliver benefits from the transition to net zero for households and businesses across Scotland?

- Offering Government interest relief on commercial borrowing for energy efficiency improvements for homes and businesses would provide a greater access to support, could streamline administration and reduce the need for direct lending from the Government thereby allowing budgets to achieve more.

- Establish a legal standard commitment for all private and public (housing and business) landlords to meet energy efficiency targets in their buildings and provide the necessary additional Government funding support for landlords to improve the energy efficiency of their buildings.

- Co- existence with other industries and engagement with the local supply chain. This will create and retain wealth within the local community and link to education and skills which will enable people to access skilled jobs, leading to increased household income and enabling businesses to remain competitive.

- Place more emphasis on the use of Community Benefit funds for energy and efficiency improvements for households and businesses.

- Raise the profile of how households and businesses can improve their energy efficiency and the support available through a coordinated and continuing national/local educational communication strategy.

- Actively support initiatives like the “Shetland Tariff” to find ways to deliver affordable electricity to households and businesses operating in high energy demand geographies, high energy costs markets but in the middle of very high energy generation activity.

- Place more emphasis and incentivise the development of district heating schemes utilising clean energy. The current price of the Shetland district heating scheme is 9.5p/kWh compared with an average electricity price of 33.00 p/kWh (capped).

Question 3. How can we ensure our approach to supporting community energy is inclusive and that the benefits flow to communities across Scotland?

Shetland Islands Council has a number of key responses on this question as set out below:

- As a community with a long term association to oil and gas production and with huge opportunities to switch into renewables generation, Shetland is in the vanguard of the national energy transition. It is important for the Scottish Government to understand that the switch from fossil fuels to renewable energy production will require existing oil and gas infrastructure to be redeployed as well as the skills base. Such oil and gas infrastructure needs to be kept operational until high volume renewable energy is available in 10 to 15 years. Otherwise, the investment required to support renewable energy developments such as hydrogen production will be massive and will reduce the essential viability of these ventures. Decarbonising the remaining oil and gas developments is essential so that energy and infrastructure transition can be achieved as cleanly as possible.

- Shetland's current onshore wind production is over 11MW, including the 4.5MW community owned Garth Wind Farm. The 443MW Viking Energy Project becomes operational in 2024. Two additional onshore windfarms are consented and expected to be operational by 2027 producing an additional 120 MW. Another is in the planning process and, if consented, would produce a further 120 MW. The NE1 ScotWind sites to the east of the isles are expected to have a capacity of 2.8 GW by 2035. Altogether that is approaching 3.5 GW of installed capacity, vastly beyond Shetland's own peak electricity requirement of 45 MW. Given the massive contribution that Shetland, as the host community, will make to the national energy targets, our households and businesses should not have to endure the highest energy costs in the country. The Council is therefore actively pursuing a policy for a fair market in energy pricing and will work with the Scottish Government on this essential matter.

- The main focus of EnQuest, operator of the Sullom Voe Terminal in Shetland, is to transform this terminal into an international scale clean energy hub by harnessing stranded onshore and offshore wind power to effect large scale hydrogen production. A number of other companies are also very active in Shetland planning large scale hydrogen and derivative fuel production and all these projects are fully aligned with the ORION Clean Energy Project which has benefitted from Scottish Government Energy Transition Fund (ETF) funding during its research phase and will need further Government support as developers prepare business plans for final investment decisions.

- All proposed offshore wind farms must be planned with a high emphasis on protecting marine biodiversity and with full recognition of existing marine activities, particularly fisheries (which is the largest income generating sector of the Shetland economy and it's economic importance must be recognised as the national energy strategy is planned).

- We note the study into the regulatory, infrastructure and economic requirements relating to Co2 shipping and emphasise that EnQuest at the Sullom Voe Terminal, with its connections to a number of large Northern North Sea reservoirs for Co2 storage, is also heavily involved in developing this sector. In addition we suggest that a similar study is conducted into hydrogen (and derivative fuels) shipping to build on the work being done by the Net Zero Technology Centre into the Liquid Organic Hydrogen Carrier method.

- We are keen to see further community energy projects developed in Shetland but this is highly challenging due to the highly constrained nature of the Shetland Electricity Distribution Grid and the current regulatory framework. Optimising and/or removing the current approach to curtailed wind under the Contract for Difference (CfD) process will help enable the generation of green hydrogen and/or power storage. In addition Ofgem's Transmission Network Use of System, (TNUoS) charges apply to small scale generators, less than 100MW. Local wind and tidal generation play an important part in providing electricity and will also be important for green H2 production and/or power storage in the future. The economic viability of local generation systems in Shetland is therefore impacted by these charges.

Question 4. What barriers, if any, do you/your organisation experience in accessing finance to deliver net zero compatible investments?

- At present local authority funding is at a critical point with this Council facing a significant deficit caused by the background pressures that the Scottish Government is well aware of. Keeping core services operational is our priority which means that there is inadequate funding available to enable net zero investments. Instead, the Council seeks to make progress through applications for Scottish, UK and even the remaining EU support schemes when opportunities arise. This competitive approach is inefficient because so much staff time is required to prepare high quality bids for funding that have no guarantee of success and are often unsuccessful. It would be far more efficient across the whole of government if local authorities were allocated specific budgets for net zero investments.

Question 5. What barriers, if any, can you foresee that would prevent you/your business/organisation from making the changes set out in this Strategy?

- The Council's approach to net zero targets aligns strongly with the draft Scottish Energy Strategy and Just Transition Plan. We have a net zero route map in place and we are working on detailed plans to effect change in all the Council's activities and to encourage similar change in our community. We have a clear understanding of what needs to be done in Shetland but the main barrier to making progress is funding to resource the work required to be undertaken and also to initiate pilot clean energy projects. Recruitment of suitable skilled staff to work in energy transition is also a concern and an

Energy Skills Transition Group has been established to investigate how to make progress on our current and expected skills issues.

Question 6. Where do you see the greatest market and supply chain opportunities from the energy transition, both domestically and on an international scale, and how can the Scottish Government best support these?

- From a Shetland perspective the best market and supply chain opportunity is in offshore wind, particularly if that energy has a route to market through hydrogen production and linked derivative fuels. Other strong prospects here are in tidal energy production and in kelp production. To enable scaled up renewable energy production from these sources to meet national targets within the timeframe set will need government support to reuse existing oil and gas infrastructure such as the industrial sites, pipelines and ports (export, logistics and marshalling activities). Advanced marine planning is required to identify how national offshore wind targets can be met with minimal impact on the marine environment and on co-existence with other marine activities such as fisheries and navigation. If suitable offshore sites can be identified around Shetland, the Sullom Voe terminal has the capacity to process and export renewable energy fuel derived from 30+ GW of offshore wind energy.

Question 7. What more can be done to support the development of sustainable, high quality and local jobs opportunities across the breadth of Scotland as part of the energy transition?

- As the renewable energy industry gets underway in Scotland the Government must support more Scottish enterprises to get involved. Very few of the energy companies and tier 1 supply chain companies currently working on Scottish renewable energy projects are actually Scottish. That means the profits will not remain in Scotland which then limits the nature of the high quality job opportunities that result. Supporting much more Scottish based industrial growth is therefore essential.

- The development of offshore wind is a key component of Scotland's clean energy future. Without investment in Scottish ports plus turbine and electrolyser manufacturing industry the majority of work will go overseas. In the case of Shetland investment is required in the ports of Lerwick and Dales Voe to enable offshore floating wind turbine assembly and in Sullom Voe to become a clean fuel export hub.

Question 8. What further advice or support is required to help individuals of all ages and, in particular, individuals who are currently under-represented in the industry enter into or progress in green energy jobs?

- Skills Development Scotland (SDS) needs to have a much more dynamic role with more emphasis on well-resourced local offices better able to engage with energy industry companies, training providers and the School service.

The service is currently too inward looking and bureaucratic, and needs to be far more communicative and engaging.

- In Shetland Highlands & Islands Enterprise (HIE), University of Highlands and Islands (UHI) and SDS are working together to help develop the future skills base required for a clean energy future but as mentioned above SDS resourcing is limited and more pace is required.

Chapter 3 – Energy supply

Scaling up renewable energy

Question 9. Should the Scottish Government set an increased ambition for offshore wind deployment in Scotland by 2030? If so, what level should the ambition be set at? Please explain your views.

- Considerable planning needs to be undertaken before the Scottish Government sets further targets for offshore wind development. The national marine plan needs to be properly researched and strengthened so that areas for offshore wind development do not conflict with other sectors such as fisheries and navigation, and minimises impact on the marine environment. 33 GW of offshore wind has just been sanctioned through ScotWind and INTOG, and the priority now has to be understanding how those projects can be deployed and find routes to market before the Scottish Government increases the 2030 ambition. Scotland's manufacturing and port infrastructure capacity is likely to be overstretched from the currently sanctioned offshore wind so significant investment is required to enable full economic benefit in Scotland from further approvals. With the necessary investment in place, Shetland has the capability to handle the logistics for 30+GW of floating offshore wind power, which includes the exporting of the hydrogen and derivative fuels produce. All that is feasible only if the essential marine planning stages have identified suitable offshore development sites.

Question10. Should the Scottish Government set an ambition for offshore wind deployment in Scotland by 2045? If so, what level should the ambition be set at? Please explain your views.

- There is no doubt that Scotland has a very significant opportunity around offshore wind, the sea areas around Scotland have among the highest wind loading factors in the world and engineering capabilities are of the highest standard. However floating offshore wind is still in in its early stages and understanding the economics, commercialisation, environmental impacts and sectoral competition issues all need to be understood much better before any hard targets can be defined.

- The balanced approach advocated by the “Shetland Energy Development Principles” which recognise and emphasise the need for a holistic approach are recommended for consideration as part of all development planning.

- However, with all that in mind, if Scotland is to in any way approach the scale of energy production achieved during the Oil and Gas era, significant offshore wind will be absolutely essential. Therefore, strategic planning processes should provide the full resources required to model the full impacts and requirements for a large increase in potential offshore wind generation at the outset and avoid the current patchwork of incremental rounds based on inadequate scientific information.

Question 11. Should the Scottish Government set an ambition for marine energy and, if so, what would be an appropriate ambition? Please explain your views.

- The response to Q10 is also relevant to this somewhat wider question; Scotland has a large surrounding sea area and it would be rational to maintain an overview of whether and how energy production could best fit into the holistic use of that resource.

- Specific communities and geographies, Shetland being the prime example, have an even more direct interest in the use of our surroundings seas. The sea has defined the social, cultural and economic well-being of the islands throughout history and will continue to do so. That has scoped across trade routes, whaling, fisheries, national security, oil and gas etc. etc. and is now moving into offshore wind. There will no doubt be new opportunities from the sea, both in energy and other developments, the critical matter is that none of them undermine environmental protection imperatives or prejudice enduring benefits.

- In addition to offshore wind opportunities it is relevant to note that Scotland is a world leader in tidal technology development and Nova Innovations Ltd’s existing and planned Shetland projects are part of that success. Whether targets are set for tidal developments or not, it is essential that this sector and the emerging wave energy sector are not completely sidelined by the massive commercial interest in onshore and offshore wind. Continuing Government support is required to take tidal energy to a stage where it can complement wind energy economically in the national power system. The grid balancing benefits of tidal energy are described accurately in the draft strategy so the sector has to be encouraged to grow as intermittent wind power becomes the main national source of electricity. These growth ambitions have to be realistic so 100MW by 2030 and 1GW by 2045 would seem achievable.

- While the Council is inadequately sighted on wave power to advise on future national targets, the important work being done in Orkney to test

wave power needs to be considered. Wave technology that works in Orkney should also succeed in other locations such as Shetland.

Question 12. What should be the priority actions for the Scottish Government and its agencies to build on the achievements to date of Scotland's wave and tidal energy sector?

- Identification of prime development sites through marine research and planning taking due consideration of environmental impacts and competition with other marine based sectors.

- Supporting Contracts for Difference for commercial ventures.

- Funding a structured and continual programme of research and development.

- In Shetland NOVA Innovation tidal development benefited significantly from EU funding during the initial trial stages. Similar national funding should be considered for wave energy

Question13. Do you agree the Scottish Government should set an ambition for solar deployment in Scotland? If so, what form should the ambition take, and what level should it be set at? Please explain your views.

- The technology for solar deployment is well advanced and is generally available on the market. Modern solar technology even works well in Shetland. However, installing solar energy is expensive so it is not affordable for low income households. Government schemes such as the support available through Home Energy Scotland are very useful but better methods of deployment need to be considered for low income households and for landlords in the renting sector. That suggestion apart, the Council agrees with the actions set out in the draft Strategy but does not see a need to set a particular target for solar deployment because the market is generally working well.

Question 14. In line with the growth ambitions set out in this Strategy, how can all the renewable energy sectors above maximise the economic and social benefits flowing to local communities?

- Please refer to our answer to question one relating to the attached Shetland Energy Development Principles.

Question 15. Our ambition for at least 5 GW of hydrogen production by 2030 and 25 GW by 2045 in Scotland demonstrates the potential for this market. Given the rapid evolution of this sector, what steps should be taken to maximise delivery of this ambition?

- The Council agrees with the Scottish Government's ambition for hydrogen production and is a partner in the ORION Clean Energy project which seeks to facilitate the high volume production of hydrogen and derivative fuels from Shetland's wind and tidal resources. However, switching demand from fossil fuels to higher cost hydrogen in the current time of economic recession and high inflation is a very difficult proposition. In these circumstances Government incentive measures are necessary to stimulate demand sufficiently to get commercial hydrogen production underway. Scottish Councils should be regarded as anchor customers for hydrogen use and need to be supported through dedicated funding to switch away from fossil fuel use.

- The Council is involved in hydrogen export research projects led by the Net Zero Technology Centre because of the opportunity to export hydrogen using the existing gas pipelines and the deep water tanker jetties at Sullom Voe. Exporting large volumes of hydrogen from Scotland is the main route to market for reaching the hydrogen production targets being considered. The country's port infrastructure needs the investment to do that work. We would therefore suggest that a national port and marine infrastructure strategy and investment plan is prepared to ensure that our ports can support the hydrogen production targets.

Question 16. What further government action is needed to drive the pace of renewable hydrogen development in Scotland?

- Getting the hydrogen production industry adequately established is the main priority before the pace can be driven. Most developers with large scale hydrogen production ambitions state the need to get small scale operations underway as a first step. These small scale projects are only emerging gradually which limits the development of the skills base, ancillary activities such as storage and distribution and the public's perception of hydrogen use. The key here is to stimulate the local demand for hydrogen by supporting anchor customers such as local authorities. Developing successful distributed small scale hydrogen production is the important first step.

- Given the importance of offshore wind in developing green hydrogen and hydrogen derivative fuels there is a requirement for strong inter-government departmental linkages between the new Offshore Wind Directorate, Marine Scotland, Crown Estate Scotland and the Hydrogen policy team.

Question17. Do you think there are any actions required from Scottish Government to support or steer the appropriate development of bioenergy?

- The Council strongly recommends that the Bioenergy Policy Working Group investigates kelp aquaculture as part of its work.

- Shetland has the potential to be a first mover in the commercial production of kelp within the offshore marine environment. Kelp grown in the marine environment acts as both a carbon sink to clean the ocean, and also as the production of a valuable raw material for further processing via a bio refinery to extract various fraction. Using the bio refinery approach, apart from bioethanol production (which allows the production of direct displacement of hydrocarbon fuel), there would also be opportunities for high value co-products for applications in cosmetics, nutritional and pharmaceutical industries along with agricultural applications including soil fertilisers and animal feed preparations.

- Kelp removes up to 20 times more carbon from the environment on an acreage basis than forestry. The production of bioethanol from kelp also allows for direct hydrocarbon fuel displacement in which forestry products are unable to replicate.

Question18. What are the key areas for consideration that the Scottish Government should take into account in the development of a Bioenergy Action Plan?

See answer to question 17.

Question 19. How can we identify and sustainably secure the materials required to build the necessary infrastructure to deliver the energy strategy?

- This is a key question and one that is often pushed down the net zero agenda. The sustainability of the materials required to replace fossil fuels with renewable energy seems to be rarely considered. For example did the Strategic Environmental Assessment for the ScotWind round identify how much copper and steel would be required to develop those projects and bring the energy to the market? Other examples are the necessary but unsustainable use of lithium in batteries and the use of plastics in electric vehicles, solar panels and heat pumps. These are all key sustainability issues that need to be resolved on a global basis as we progress renewable energy solutions. The Council suggests that the matter of sustainable materials use and the circular economy needs to have stronger emphasis in the national energy strategy.

Question 20. Should a rigorous Climate Compatibility Checkpoint (CCC) test be used as part of the process to determine whether or not to allow new oil and gas production?

- The Council thinks that CCC tests should be used. (Note that the Just Transition principles apply primarily to oil and gas production. Continuing oil and gas production will be required for our energy needs until sufficient clean energy sources are available.)

Question 21. If you do think a CCC test should be applied to new production, should that test be applied both to exploration and to fields already consented but not yet in production, as proposed in the strategy?

- CCC tests should apply to all stages of oil and gas development from exploration, appraisal, development and production to exploration and to consented fields to identify how carbon emissions can be reduced at every opportunity

Question 22. If you do not think a CCC test should be applied to new production, is this because your view is that:
• Further production should be allowed without any restrictions from a CCC test;
• No further production should be allowed [please set out why];
• Other reasons [please provide views].

Question 23. If there is to be a rigorous CCC test, what criteria would you use within such a test? In particular [but please also write in any further proposed criteria or wider considerations]

In the context of understanding the impact of oil and gas production in the *Scottish North Sea* specifically on the *global* goals of the Paris Agreement, should a CCC test reflect –

A)the emissions impact from the production side of oil and gas activity only;
B) the emissions impact associated with both the production and consumption aspects of oil and gas activity (i.e. also cover the global emissions associated with the use of oil and gas, even if the fossil fuel is produced in the Scottish North Sea but exported so that use occurs in another country) – as proposed in the Strategy;
C) some other position [please describe]. B
Should a CCC test take account of energy security of the rest of the UK or European partners as well as Scotland? If so, what factors would you include in the assessment, for example should this include the cost of alternative energy supplies?

- Yes.

Should a CCC test assess the proposed project's innovation and decarbonisation plans to encourage a reduction in emissions from the extraction and production of oil and gas?

- Yes

In carrying out a CCC test, should oil be assessed separately to gas?

- Yes, but bearing in mind that high combinations of oil and gas are found in most reservoirs, and gas is a transition fuel and the feedstock for blue hydrogen production.

Question 24. As part of decisions on any new production, do you think that an assessment should be made on whether a project demonstrates clear economic and social benefit to Scotland? If so, how should economic and social benefit be determined?

- Overall socioeconomic benefits need to be determined using the established Government Green Book methods.

- We would also expect that issues and benefits would be considered in Shetland through the application of the Shetland Energy Development Principles and suggest that a similar approach is adopted across the country.

Question 25. Should there be a presumption against new exploration for oil and gas?

- In circumstances when it is clear that sufficient clean energy will be available, at an affordable price, to meet energy needs, especially for households and businesses in places like Shetland currently having to pay the most; then transition would be sufficiently advanced to generally presume against new hydrocarbon exploration.

- If that cannot be assured, then it would seem necessary to consider new exploration and development subject to CCC tests etc.

Question 26. If you do think there should be a presumption against new exploration, are there any exceptional circumstances under which you consider that exploration could be permitted?

- As stated in Q25, new exploration and development should only be necessary where there is uncertainty about, or failure to meet, affordable clean energy targets for all households and communities.

- In the case of the Shetland area, there are highly significant oil and gas reserves to the West of Shetland associated with the Clair field and Quad 204 and over 1 bn bbls of undeveloped resources have been delineated in Clair Phase 3, Rosebank and Cambo.

- Continued production from this region is critically important in the short and medium term for the UK and Scotland, both in energy transition and energy security terms.

- Further targeted exploration and appraisal in this region is potentially very strategically important for Scotland if affordable clean energy and/or energy security remains difficult to assure.

Chapter 4 - Energy demand

Heat in Buildings

Question 27. What further government action is needed to drive energy efficiency and zero emissions heat deployment across Scotland?

- The existing grants, loans and schemes for homeowners need to be continued well into the future. Funding for these schemes needs to be increased and targeted towards those most vulnerable.

- The Scottish Government needs to acknowledge air to air heat pump systems as a cheaper alternative to air to water heat pumps and needs to support this technology, which can make a big contribution to energy efficiency in buildings.

- There has to be Government recognition of existing heat networks that have been operated successfully and that have continually upgraded systems to ensure improved efficiencies and reduced emissions. Any new legislation must not impact negatively on existing successful heat network operators. For example, previous consultation exercises did not refer to Energy from Waste, only energy from fossil fuels. Energy from Waste plants such as the one that fuels the successful Lerwick District Heating scheme need to be treated fairly in new legislation.

- Any licensing/consent/permit process must reflect the experience, scale of operations, as well as location and ensure that remote rural and island heat networks whether new or existing are not overburdened under a ‘centralised’ one size fits all process.

- There need to be better access for Government support to expand existing heat networks such as the Lerwick District Heating Scheme and recognition of the low cost heating the scheme provides in comparison to electric and fossil fuelled heating systems.

- Whilst the Council appreciates the domestic energy efficiency funding that has been provided, and also that this funding is required well into the future, it should be recognised that requirements for accreditations e.g. PAS2035

(for domestic energy efficiency works) is designed more for larger scale companies operating within large-scale contracts and not for small companies operating in rural and remote areas. Flexibility around accreditation would make a big difference in getting much more energy efficiency work done in remoter places like Shetland. If flexibility is not possible in the current system then a completely different approach is required to simplify accreditation and streamline the application process so that much more work to be done.

- Following on, the implementation of accreditation processes does not necessarily lead to improved quality. A local insulation firm that went through PAS2035 discovered that "approved" systems of insulation at that time would not work in a lot of build types in Shetland.

- Accreditation schemes that aren't well designed, don't consider adequately the impacts in rural and remote areas (and that leads to measures that can't work in local build types) cause huge amounts of time being spent on paperwork for domestic assessments for no real gain and has also suppressed the interest among local installers. This has slowed progress on energy efficiency improvement.

- For a householder there is a very confusing landscape currently in terms of energy efficiency financing which includes the following schemes:

  - Area Based Schemes
  - Warmer Homes
  - Home Energy Scotland grants and loans
  - ECO4
  - ECO4-Flex

  A simpler approach is required.

- The unclear linkages between schemes and referral processes can lead to householders being confused by the process. Work is currently underway in Shetland to try and remedy this and the Council notes the continued support from and capacity expansion in Home Energy Scotland.

- Hydrogen development as domestic heating fuel needs to be fully investigated. Much of the discussion around hydrogen focuses on big business and large vehicles.

- The significant reduction of energy consumption within the existing non-domestic build stock will take significant investment that will not meet usual financial business case methods. An example being that retrofitting oil boiler properties with heat pumps will also require significant fabric and distribution system upgrades. This issue also needs to be recognised.

Energy for transport

Question 28. What changes to the energy system, if any, will be required to decarbonise transport?

- The completion of the Viking Energy Project along with the laying of the interconnector will provide Shetland with clean electricity so that will encourage more people to buy electric vehicles and, in time, more inshore vessels will have electric propulsion systems as long as the price is affordable. In order to support this transition the electricity grid has to be capable of carrying sufficient energy to all parts of the islands. Once locally produced hydrogen is available then that storage and distribution network needs to enable hydrogen use in vehicles and vessels.

Question 29. If further investment in the energy system is required to make the changes needed to support decarbonising the transport system in Scotland, how should this be paid for?

- Future investment from public sources needs to be paid for by increasing taxation on remaining carbon emitting transport and by additional taxation on fossil fuel producers.

Question 30. What can the Scottish Government do to increase the sustainable domestic production and use of low carbon fuels across all modes of transport?

- The Scottish Government has to support the market for clean fuel use until it is large enough to sustain commercial clean fuel production. Early adopters of low carbon fuel need to be encouraged through funding mechanisms.

Question 31. What changes, if any, do you think should be made to the current regulations and processes to help make it easier for organisations to install charging Infrastructure and hydrogen/low carbon fuel refuelling infrastructure?

- The regulations for all forms of clean energy need to be standardised so that consumers can buy different kinds of fuel for equivalent prices in the same place. Fuelling stations should be selling green electricity, hydrogen, biofuels and e-methanol etc. There also needs to be a standardisation and development of regulations for the use of electricity and hydrogen on vessels and vehicles as businesses and individuals need to consider the whole fuel distribution system rather than just one element. For remoter areas it may not be economic for a fuelling station to offer multiple fuelling options and that community may have to consider relying on a particular low carbon fuel for vehicles etc.

Question 32. What action can the Scottish Government take to ensure that the transition to a net zero transport system supports those least able to pay?

- Invest in public transport to increase network coverage and accessibility particularly in rural and island areas. Consider making travel on public transport free. Invest in active travel to facilitate walking wheeling and cycling and reduce reliance on private car.

Question 33. What role, if any, is there for communities and community energy in contributing to the delivery of the transport transition to net zero and, what action can the Scottish Government take to support this activity?

- Scottish Government should support better digital connectivity in rural and island communities to reduce the need for travel for work and health appointments.

- There is a huge role for communities and community energy in contributing to the delivery of net zero. Through the Net Zero Living: Pathfinder Places scheme, the Council is currently investigating the non-technical barriers to rural energy hubs. This will support taking a place based approach to many of the challenges associated with the transition to net zero including transport. The Scottish Government could support the lessons learnt from this process as the projects seeks to be highly replicable in other remote communities.

Question 34. Electric vehicle batteries typically still have around 80% of their capacity when they need replacing and can be used for other applications, for example they can be used as a clean alternative to diesel generators. What, if anything, could be done to increase the reuse of these batteries in the energy system?

- Battery replacement should be adequately incentivised to encourage a circular economy to grow for re-using batteries across a range of purposes.

Energy for agriculture

Question 35. What are the key actions you would like to see the Scottish Government take in the next 5 years to support the agricultural sector to decarbonise energy use?

- The Government's Farm Basic Payment Scheme contains greening measures that could be redesigned with additional funding to encourage more operational decarbonising including switching vehicles and machinery to clean fuels.

- While agriculture has a high carbon emission relating to fuel use, the main agricultural carbon emissions in Shetland come from farming on peatland.

Much more support is required to restore and then maintain peatlands to reduce such carbon emissions and that support needs to be considered in wider national agricultural support measures, which are outside the scope of a National Energy Strategy.

Energy for Industry

Question 36. What are the key actions you would like to see the Scottish Government take in the next 5 years to support the development of CCUS in Scotland?

- The availability of the deep-water port and jetties at Sullom Voe Terminal (SVT) and a pipeline network linked to several well-understood offshore reservoirs presents the opportunity to repurpose infrastructure to import and permanently store material quantities of CO2 from isolated emitters in the UK, Europe or further afield. SVT Operator EnQuest has conducted initial phases of feasibility and economic screening work in respect of this carbon storage concept. These studies have indicated the capability of the existing infrastructure, including the EnQuest operated East of Shetland pipeline system, and storage sites to support a project of up to 10 million tonnes per annum of CO2. EnQuest made two applications in respect of two licence areas in the NSTA UK offshore CCS licensing round, with results expected to be announced in the second quarter of 2023. The main action that the Council would like to see from the Scottish Government is to recognise that there is another potential large scale CCUS project in Scotland which links a deep water port facility to storage reservoirs. At capacity this project could make a significant contribution to the Scottish economy and, as such, should merit Government investment support.

- Support in terms of developing relationships with major European emitter countries, including in relation to current regulatory hurdles, would also be welcome.

Question 37. How can the Scottish Government and industry best work together to remove emissions from industry in Scotland?

- By seeking cooperation and support for a large scale exemplar project that can be used to formulate regulations and identify the best incentive measures.

Question 38. What are the opportunities and challenges to CCUS deployment in Scotland?

- Scotland can be an international leader in CCUS in the, hopefully, relatively short period when carbon capture is necessary. There are many suitable former and aging oil and gas reservoirs in the North Sea region that provide an excellent opportunity for developing a revenue boosting industry that

attracts international income into Scotland. The main challenges are identifying the engineering solutions for particular oil and gas reservoirs linked to importing facilities together with attracting the necessary investment.

Question 39. Given Scotland's key CCUS resources, Scotland has the potential to work towards being at the centre of a European hub for the importation and storage of CO2 from Europe. What are your views on this?

- We firmly believe that Scotland has significant potential to play a major role in the import and storage of CO_2 from Europe. In addition to the storage volumes accessible in the region and infrastructure repurposing potential, Scotland has a wealth of transferable expertise from the oil and gas sector which can be deployed to unlock this opportunity. Norway has already made clear its ambitions to become a CO2 import hub with "stranded CO2 emitters" demonstrating strong appetite for such a solution, for example through the Longship and Northern Lights project. It is imperative that Scotland also takes an early mover advantage in the CO2 import space and work to establish relationships with potential customers (i.e., emitters) early in order to secure CO2 import volumes.

- The Sullom Voe Terminal led solution would be a leading flagship project for Scotland. The initiative presents a significant opportunity to leverage and transition existing oil and gas skillsets and industry capabilities to support Net Zero targets and ambitions for a Just Transition for the sector.

Chapter 5: Creating the conditions for a net zero energy system

Question 40. What additional action could the Scottish Government or UK Government take to support security of supply in a net zero energy system?

- The recent Net Zero Route Map prepared for Shetland has highlighted the difference in the local energy consumption profile compared to other local authority areas. In addition to this Shetland's energy generation profile far outweighs our local demand. The Governments therefore need to recognise that local areas have different energy requirements and different sources of energy supply so national energy policies need to contain a high degree of flexibility to enable fair energy outcomes in terms of secure supply and affordable prices across all of society. Shetland's vision is that our future energy will be provided on-island through a whole energy systematic approach based on wind, tidal and solar energy backed up with a connection to the national grid. These energy sources will be used to produce the secondary fuels such as hydrogen and e-methanol required to replace fossil fuel in activities where green electricity can't be used. Our heated buildings will use district heating systems, solar energy, wind power and air/ground/water sourced pumps. For all this to work effectively to achieve secure and affordable energy, flexible tariff and distribution systems have to

reflect local supply and demand. That will require the energy regulatory frameworks to be overhauled.

Question 41. What other actions should the Scottish Government (or others) undertake to ensure our energy system is resilient to the impacts of climate change?

- The culture of tackling climate change needs to change from a competitive commercial approach to an emphasis on far higher levels of collaboration involving governments, energy companies, the supply chain and the local communities directly impacted by large scale renewable energy projects. That message needs to be at the heart of all Government policies relating to climate change. The transition away from fossil fuels is too important to be hijacked for corporate shareholder gain, for short term government tax grabs or for a continuous flow of complicated, disjointed and bureaucratic funding competitions.

- At a much more practical level, the transmission and distribution networks need to be designed, installed and maintained to meet the worsening climatic conditions in all areas of the country. In Shetland that means designing for high winds and icing on the wires. A considerable part of the Shetland distribution network was brought down in December 2022 in blizzard conditions and hundreds of people were without power for nearly a week. That situation could be avoided if the distribution cables were buried.

Chapter 6: Route map to 2045

Question 42. Are there any changes you would make to the approach set out in this route map?

- The Council's main observation is that the available investment does not nearly match the policy, energy supply and demand ambitions. There also needs to be a much higher emphasis on the reduction of energy use. Also note that the Energy Supplies Route Map refers to 8-11 GW of additional offshore wind capacity by 2030 but offers no timelines for when the remaining 17 GW of sanctioned ScotWind offshore wind energy will be operational.

Question 43. What, if any, additional action could be taken to deliver the vision and ensure Scotland captures maximum social, economic and environmental benefits from the transition?

- The Council notes the Engagement appendix on page 157 and suggests that the vision requires an advanced communications plan to get these very important messages across to the main stakeholders and to the wider Scotland population.

- The Council agrees with all the proposals included in Chapter 7 for UK Government actions to support the vision presented in the draft Strategy and Just Transition Plan.

Impact assessment questions

Question 44. Could any of the proposals set out in this strategy unfairly discriminate against any person in Scotland who shares a protected characteristic? These include: age, disability, sex, gender reassignment, pregnancy and maternity, race, sexual orientation, religion or belief.

- Obtaining clean, affordable and secure energy while working to maximise and share economic benefits in a framework of Just Transition should help all people who share protected characteristics. The main uncertainty would be associated with an individual's particular religion or belief.

Question 45. Could any of the proposals set out in this strategy have an adverse impact on children's rights and wellbeing?

- Apart from the reference to low income and fuel poverty in question 47, the Council is not aware of adverse impact on children's rights and wellbeing.

Question 46. Is there any further action that we, or other organisations (please specify), can take to protect those on lower incomes or at risk of fuel poverty from any negative cost impact as a result of the net zero transition?

- The Council refers to our earlier answers to Questions 1, 2, 4, 5, 13 and 15 relating to the high rates of fuel poverty and the shortage of funding to address these issues from an energy perspective. These answers contain suggestions on how access to clean, affordable and secure energy sources could be improved. That stated, remedies to protect people from negative impacts of net zero transition would need to be considered in more detail as part of policies to tackle poverty in society more generally. Such matters can't be adequately addressed in an energy strategy.

Question 47. Is there further action we can take to ensure the strategy best supports the development of more opportunities for young people?

- Turn the Strategy into learning tools aimed at different age groups and associated with climate change knowledge qualifications.

Just Transition energy outcomes

Question 48. What are your views on the approach we have set out to monitor and evaluate the Strategy and Plan?

- Including the evaluation of energy transition measures within Climate Change performance is also the approach that this Council has adopted with the introduction of our net zero route maps. The Council also agrees that economic, social and environmental assessments are important tools to use. We are particularly interested in the Islands Communities Impact Assessment and would be very pleased to help with this work.

Question 49. What are your views on the draft Just Transition outcomes for the Energy Strategy and Just Transition Plan?

- The Council fully supports the outcomes for Just Transition presented in the Energy Strategy and Just Transition Plan. Given Shetland's very high dependence on oil and gas related work, the Council requests that progress towards Just Transition is carefully monitored at regional level and is adequately supported if there are market failures along the way.

Question 50. Do you have any views on appropriate indicators and relevant data sources to measure progress towards, and success of, these outcomes?

- The Council does not hold particular views on indicators and data sources at this stage apart from stressing that any national standards that are introduced need to have applicability across the whole country, with particular regard to colder and remoter communities.