States of Alderney

Draft **Alderney Energy Policy**

1. Introduction

1.1 This document sets out the key issues and options for Alderney in relation to the supply, use and development of energy for the Island. It identifies the context and some potential objectives for energy policy. These are draft objectives, prepared by a working party of knowledgeable stakeholders for the States of Alderney, and presented to help with a wider debate.

1.2 The next stage of this work is to enter into public engagement to shape and build the Island's energy policy. Without public support and involvement, the challenges and opportunities ahead will not be addressed. There are big choices here for Alderney's future and we need to decide on them together.

2. The Strategic Context

2.1 Alderney forms part of the Bailiwick of Guernsey with a population of about 2,000. Being a small island, it has limited resources available to meet the considerable demands of:

- reducing reliance on fossil fuels
- improving energy security
- developing new strategies and approaches towards the generation and consumption of energy
- reducing the cost of energy to its residents and businesses
  and
- meeting its wider environmental responsibilities in relation to climate change and the reduction of carbon and other greenhouse gas emissions.

2.2 Energy policy an important contribution to the Island's economic wellbeing and development and therefore requires a strategic and focused approach to meet future challenges and to ensure the environmental and economic attractiveness of the Island.

2.3 **Three factors shaping energy policy for Alderney**

2.3.1 **Firstly**, Alderney is highly reliant upon imported oil as an energy source including for the generation of electricity. This is not only unsustainable for the future for environmental sustainability reasons but will also continue to make electricity expensive, with limited expectation of being able to reduce the costs to consumers.

2.3.2 **Secondly**, Alderney has within its territorial waters potential to produce renewable energy from tidal turbines, wind turbines and wave energy converters. When considering wave and tidal energy converters that potential will take time to be developed, not only in relation to the design and production of the technology needed to produce the energy in the hostile environment of Alderney territorial waters but also to significantly reduce the cost of generating renewable energy and the need for the payment of subsidies. The situation is, however, different for wind, both offshore and onshore prices continue to reduce, and this is a resource Alderney could explore in the near term.

2.3.3 **Thirdly**, the cost of investing in renewable energy and quantum of energy to be generated at the scale exceeds the requirements of the Island and therefore the export of energy to other communities is a key requirement for the large scale deployment of renewable energy. As

such, consideration will need to be given that the approach that the Island wishes to take when considering the adoption of technology on a large scale (i.e. for export) or on a smaller scale (for Island consumption) – effectively development of the marine versus development of the terrestrial environments.

2.4 Short and medium term energy policy

2.4.1 Steps can be taken now to mitigate Alderney's energy challenges by reducing the consumption of energy, pending the longer-term change of energy supply and dependency. Whilst energy generation is a key focus of this policy, energy efficiency and reduction will also need to be considered as part of any long term planning for the Island. This most commonly takes the form of increased thermal efficiency of buildings, but also crosses over with transport and waste.

2.4.2 As a small island it is feasible for Alderney to limit its carbon footprint impact. For example the emissions made by petrol and diesel motor vehicles can be reduced by encouraging other forms of transport. This may also deliver health benefits for the population. New technology is also being developed such as electric vehicles, which are highly suited to a small island.

2.4.3 Encouraging smaller scale adoption of renewable energy systems such as solar power and windmills for the energy requirements of domestic and possibly commercial premises is a further opportunity that can be developed as the cost of these technologies falls.

2.5 Large scale renewable energy

2.5.1 Energy policy will need to take account of longer term developments in energy technology and market reform. Whilst Alderney may be able to benefit in the short to medium-term from smaller scale renewable energy developments, Alderney's potential for large-scale tidal renewable energy will be strategically important and has the potential to provide a significant income stream in the future. Policy must be flexible enough to enable a change of energy dependency to take place.

2.5.2 An Alderney Tidal Energy Group has been working to develop the Island's approach to realising the longer term potential of tidal energy.

2.6 Energy connection

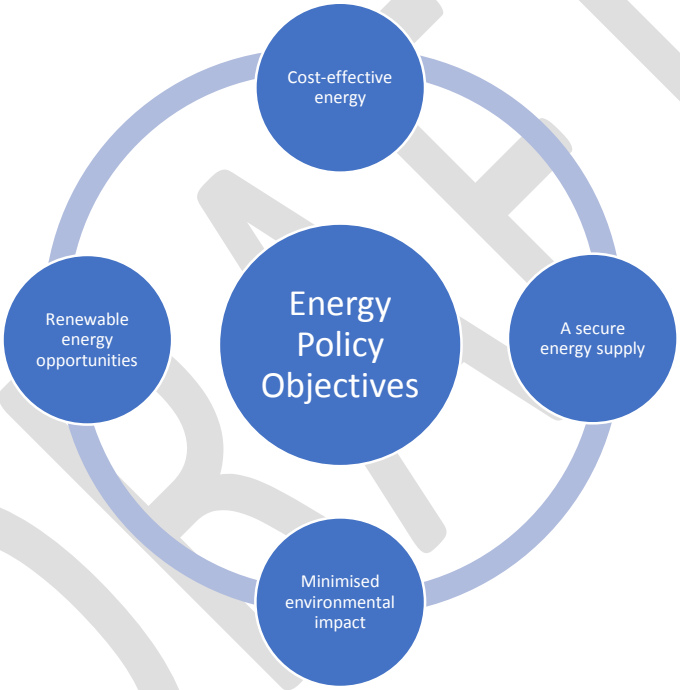
2.6.1 It may be possible to remove Alderney's dependency on fossil fuels by connecting into off-Island power supplies through a cable linking Alderney to the Channel Island grid and onward to power generation in France or directly by cable to France. The production of large scale tidal renewable energy will require some form of under-sea cabling to facilitate export. It is therefore important for Alderney's energy policy to consider whether and how it accommodates the infrastructure required by the development of large-scale renewable energy.

2.7 **Consultation and engagement in developing energy policy**

2.7.1 This report sets out the draft policies for the future energy requirements of Alderney and for the potential development of large-scale renewable energy for public consultation. Our commitment is that these draft policies should be considered, informed and shaped by Alderney's public and by key stakeholders in the community. Following a public consultation process, the States of Alderney will debate and adopt an Energy Policy which will shape future actions and legislation. This policy is therefore the first step along the road in developing more detailed plans. It is recognised that additional specific detail will need to be added as the policy develops.

3. Objectives

3.1 The draft objectives of the Alderney Energy Policy are set out below.



3.2 **To ensure that the Island has a cost-effective supply of energy.**

3.2.1 Currently, electricity is supplied by Alderney Electricity Limited. The States of Alderney is the majority shareholder in this company. Electricity is generated by the power station using oil that is imported by marine tanker. The cost of supply is therefore affected by fluctuations in the oil price and shipping costs.

3.2.2 The 2018 price of an electricity unit was 44.5 p[1]. That makes it, across the UK and Channel Islands the second most expensive electricity cost per unit. The cost in other jurisdictions (2018) is as follows:

Jurisdiction	Cost per Unit
Guernsey	•14.74 p[2]
Jersey	•12.9 p[3]
Alderney	•44.5 p
Sark	•66 p[4]
Isle of Man	•16.3 p
United Kingdom (average)	•15.2 p[5]

3.2.3 Prices changes in Alderney since 2010 have been as follows:

Year	Price
2016	•38.7 p
2015	•41.9 p
2014	•42.5 p
2013	•42 p
2012	•42.2 p
2011	•40.2 p
2010	•40.9 p

3.2.4 The price per unit of electricity was raised by approximately 3p per unit during 2017, corresponding with a 5p decrease in the price of a litre of kerosene during 2016. Household energy bills overall remained much the same after this change because most households on Alderney consume electricity and kerosene in quantities that balance out this change. The correction was made because historically AEL have chosen to make a loss on electricity and a profit on Fuel Oils which masked certain issues.

3.2.5 The underlying price of domestic electricity over the last 8 years has been maintained in a band from 41.7p at the bottom of the slump in world oil prices last year to 45.5p at the peak. Although perceptions are that oil prices have been fluctuating wildly, the impact on electricity prices has been a fluctuation of less than 10% in recent years.

3.2.6 Oil prices have risen back up to pre-2015 levels now but electricity prices are still below the levels in 2014 due to efficiency gains made in the last several years. Improvement to the power station being implemented over the next 9 months will add further gains. As principle shareholder of AEL, the SoA will need to bear in mind the importance of future capital investment in infrastructure when considering how to deploy any available funds.

3.2.7 Other forms of energy available on the island include oil, bottled gas, wood and coal.

[1] Straight average of domestic tariffs A & C assuming 6 room property and 600 units per quarter.
[2] http://www.electricity.gg/media/127339/Annual-Report-2016-2017-Final.pdf - Page 18
[3] https://www.jec.co.uk/about-us/investor-relations/financial-figures-and-reports/
[4] http://sarkelectricity.com/Pricing.htm - current basic rate
[5] https://www.ofgem.gov.uk/publications-and-updates/infographic-bills-prices-and-profits - average domestic electricity price (medium user)

3.2.8 Sourcing of new supplies of energy is expensive and there are constraints on what is available. A cable link via the Channel Islands Grid (or a similar alternative to another jurisdiction) would be very expensive to procure. However, a recent Memorandum of Understanding between Alderney Electricity Ltd and SIMEC Atlantis Energy Ltd may provide an opportunity to secure a cable connection for supply of electricity generated by the proposed tidal project in the Raz Blanchard (together with electricity supplied from France). This would be a 25 year electricity power supply agreement in which Alderney Electricity Ltd (AEL) would purchase a minimum of 5,000 MWh each year through the cable at an agreed indexed rate. In the event that AEL buys more power, the cost reduces and provides the opportunity to reduce electricity costs for electricity customers.

3.2.9 The detailed negotiations which are following on from the signing of this MOU will, if successful, open up new opportunities for accelerating energy policies on the Island. For example, the availability of a combination of renewable and nuclear energy would enable a significant reduction in the Island's carbon footprint.

3.2.9 Currently, without the Power Purchase Agreement, there is a limit in what can be done in relation to the present operations to significantly minimise cost. There are key factors affecting the price over which the AEL has little control which include:

- The cost of fuel;
- The need to undertake effective maintenance of the current infrastructure;
- The cost of transporting fuel to the power station.

3.2.10 However, the States of Alderney, as principal shareholder, is able to influence the activities of Alderney Electricity Limited in order to regulate fuel prices in a way that would not be available through an independent regulator. At the same time this avoids the cost of establishing and maintaining an independent regulator. The current structure is therefore likely to be the most cost-effective way to control prices in the foreseeable future, and is consistent with the need for the prudent financial management of Alderney Electricity's operations.

3.2.11 Whilst the current price is not the cheapest, compared to other jurisdictions, there are no unnecessary extraneous costs adding to the cost of supply. An approach such as the Power Purchase Agreement that is scheduled and capitalised over a long period may bring the overall cost to consumers down to a more acceptable level.

3.2.12 Whilst innovation in energy supply will result to some extent from emergent technologies, it is important to understand that there is also scope to innovate in supply chains, business models and the exploitation of new business opportunities in order to help improve efficiency and effectiveness in energy supply. For example, the requirement for the replacement of plant is an opportunity for consideration to be given to alternative power supplies. Given that the capital cost of investing in new generation supply is significant (regardless of technology), the most cost efficient time for change is associated with the end of life replacement of existing plant.

3.2.13 Until new alternative supplies can be secured, the Island remains at the risk of fluctuations in the availability of fuel supplies and volatile pricing. Whilst the market has been relatively stable in the recent past due to an overproduction in oil, the Island cannot rely on this position to continue. Furthermore, the lead-in time for investment and delivery of new electricity infrastructure will require decisions to be made many years in advance of new arrangements becoming operational. This means that the investigation of an alternative viable future energy

supply, which is safe, secure and sustainable should be a key priority for the States of Alderney.

3.2.15 **Action: To promote the efficient use of energy and good energy practices as part of public policy.**

This should include consideration of policies to:

- Promote a greater understanding of the impact of energy generation, distribution and usage upon the environment
- Introduce incentives and support for lower energy lifestyle choices and the development of beneficial technology both for businesses and domestic consumers
- Promote healthier, more energy efficient practices and lifestyles (in conjunction with general public health initiatives)
- Review planning and other government legislation and practices to ensure they contribute to energy policy objectives.
- Institute a programme of regular open communication, information and debate on matters relating to the production and use of energy on the island
- Investigate opportunities to work with partner organisations to explore Alderney's potential as a local test-bed for renewable energy on island.

3.3 **To ensure that there is a secure energy supply to meet the Island's needs.**

3.3.1 There has been no recent incident of the Island running short of all necessary fuel supplies, with the exception of problems in the supply of aviation fuel. This is due in the main to careful planning in maintaining a sufficient level of reserves on the Island. However, there are a number of risks involved in ensuring that there is at all times adequate energy to meet the Island's needs including:

- Bad weather preventing new supplies from reaching the Island;
- Problems in relation to the tankers or their operators or the fuel companies being able to supply the Island (eg. due to global supply issues);
- Damage to the commercial Quay;
- Fire or other incident in relation to fuel storage facilities.

3.3.2 These factors are recognised in the Island's contingency plans. Currently the Island holds 21 days of reserve fuel storage as a minimum stock level. The importation of fuel is made using the oil tankers owned by Jamesco 750 Ltd a company owned by the States of Guernsey. The Commercial Quay is able to accommodate these vessels, but may not be able to accommodate larger replacement oil tankers. As fuel supply contracts are re-tendered, it will be important to consider the extent to which there continues to be a beneficial interplay between supplies for Guernsey and Alderney.

3.3.3 The Energy Saving Trust set out demand levels in their report "Supporting the Development of the States of Alderney Energy Policy" in 2015, identifying a demand level of between 0.4 MW and 1.1 MW (with slightly higher peaks of .3 MW in the summer tourist season).

3.3.4 Increasingly energy storage is being considered at both grid and individual level. The review of supply is also an opportunity to understand how storage could benefit Alderney and help to meet its security of supply requirements. This is both important in isolation, but also as part of any transit to a renewable energy powered future.

3.3.5 A cable link to other electricity generation sources and renewable energy generation from sources in and around Alderney would significantly lower the level of risk in energy security.

3.4 **To ensure that the environmental impact of the Island's energy production and supply is minimised.**

3.4.1 The reduction of any impact upon the environment is an obligation in its own right as part of the States of Alderney's obligations towards the wellbeing of its citizens and the Island environment.

3.4.2 The supply, production and use of energy directly impacts upon the environment, in terms of air quality, emission of greenhouse gases, the potential contamination of land, visual impact, interference with sensitive nature or heritage areas, generation of noise, and of course dependence on the use of non-renewable fossil fuels.

3.4.3 Future energy supply therefore has a key role to play in mitigating the impact upon the environment and any new proposals must have as an objective a requirement to minimise and ameliorate any environmental impact upon the Island. Whilst any proposals that require planning consent may be subject to the provision of an environmental impact assessment, this is not the only way in which the environmental impact can be mitigated.

3.4.4 The impact on the environment can be made more sustainable by adopting the following hierarchy of objectives around sustainability:

- mitigating the requirement for energy;
- reducing the amount of fossil fuel-based energy;
- and developing the potential for renewable energy sources.

3.4.5 This requires a holistic approach across the whole range of services, including health (such as discouraging the use of motor vehicles in favour or cycling or walking), waste reduction, a switch from diesel and petrol vehicles to electric or other hybrid vehicles, improved building energy efficiency (e.g. through improved insulation), advice on switching to lower energy products/appliances and an emphasis on energy awareness through education programmes.

3.4.6 It is recognised that there is a specific difficulty with the aim of increasing renewable energy use on island since the population number of Alderney is relatively small in relation to the potential capital cost of large scale alternative schemes and there are limited opportunities for increasing demand to a level that makes it economically viable to an operator (including Alderney Electricity or a third-party supplier). This is also potentially contradicts another objective of this policy which is to reduce demand for energy, and the plan will need to balance these competing objectives. However, transition to electrification of transport and heating, for example, could drive efficiency and provide an opportunity for diversifying the supply of electricity into Alderney. Imaginative and creative solutions may therefore be required to be adopted including a review of what works in other similar small population catchments.

3.4.7 As part of this overall strategy the States of Alderney should consider targets for the reduction of its carbon footprint and that of the Island as a whole, within the requirements of the European regulations arising out of the Paris Accord and monitor its achievement over time. These targets will not be limited to carbon emissions only but to all greenhouse gas emissions.

3.4.8 **Action: Consider the development of policies which reduce or ameliorate levels of pollution from energy use.**

One area that might be investigated is in the use of the type of vehicles to be used on the Island. All electric vehicles might be encouraged. This can be achieved in a number of different ways whether by imposing sanctions on older and more polluting vehicles, including diesel, restricting their import, and promoting and incentivising the use of newer electric powered vehicles.

3.4.9 **Action: Businesses which have as their focus or as part of the unique selling point the reduction of, or more efficient use of energy can be encouraged through policy and decision making.**

The adoption of new technologies, systems and processes for both energy supply and demand could be encouraged to help the Island achieve the status of being a low carbon fuel community.

3.4.10 **Action: Review public policies to contribute to energy goals.**

For example, addressing the reduction and recycling of waste and, in particular plastic, all contributes to the more efficient use of resources on the Island and in the energy required to dispose of them. And promoting or requiring high standards for building energy efficiency, changes in construction practice and appearance may lead to business opportunities which contribute to the Island achieving its energy targets. Key policy areas that can make a contribution to energy policy include:

- Transport
- Economy
- Waste
- Housing
- Health
- Planning

3.5 **To facilitate the development of large-scale tidal renewable energy resources to provide financial benefit to Alderney without unacceptable environmental impact**

3.5.1 Large scale tidal energy generation has taken longer to develop than solar and wind generation and at this time remains experimental in nature and heavily subsidised. Atlantis Resources Ltd have concluded that 1 GW of tidal generation could be operational in the Raz Blanchard by 2025 with 2 GW potential in the longer term. Studies currently being undertaken by the French Government will identify the best tidal power generation opportunities in French maritime waters and this may bring forward opportunities to explore the options for Alderney's territorial waters. Estimates of the potential power generation from Alderney's waters have identified a 3 GW potential.

3.5.2 The development of tidal renewable energy brings with it the need to consider the impact on Alderney which includes any impact during a construction phase, any requirements in the operational phase including any infrastructure on Alderney and any impacts on the marine and land environments. Well-developed land-use planning and marine planning regimes will ensure that decisions about these issues are taken appropriately. Important aspects of the action plan arising from this strategy will be to consider:

- the permissible extent of tidal generation around Alderney (and whether or not wave and wind generation is included within future developments)
- how any permissions or licensing of renewable power generation are to be managed
- whether accommodating any on-island infrastructure is acceptable and , if so, where it can be accommodated
- how renewable power generation is to be regulated.

3.5.3 If the development of large-scale renewable energy generation is agreed as desirable in principle, it will be important to review the current legislation relating to renewable energy, in particular the scope of the current controls (and whether this scope should be extended). In doing so, the role and purpose of the Alderney Commission for Renewable Energy and the basis for making available Alderney assets for the deployment of test and operational equipment for the generation of solar, wind and marine energy will need to be reviewed.

3.5.4 **Action: Develop a clear plan setting out the way that renewable energy generation should be developed.**

The primary elements of the plan will be:

- Clarity about the viability and acceptability of the development and use of each of the Island's significant renewable energy assets including solar, wind and marine; and
- The potential means of interconnection; for example, by connecting into the Channel Island Grid or the provision of a direct cable to France, potentially through the development of a Power Purchase Agreement.
- The infrastructure requirements.

The plan will set out the States of Alderney's policy approach to:

- the use of subsidies to support the development of renewable energy, recognising that renewable energy generation and storage do not yet operate as efficiently as fossil fuels
- the approach to licensing the generation of renewable energy, including the need to review the current approach to licensing the development of tidal renewable energy
- the development of relationships and joint ventures with energy companies and developers
- the use of specialist expertise to provide technical and market advice
- the extent to which generation or supply infrastructure can be accommodated on island.

4. Next steps in developing Alderney's Energy Policy

4.1 In paragraph 2.7.1 of this report we set out our commitment is that these draft policies should be considered, informed and shaped by Alderney's public. A public and stakeholder engagement and consultation process will invite and encourage contributions to help shape the development of our Energy Policy.

4.2 The States of Alderney will publish and promote this draft energy policy and encourage debate and ideas about how energy objectives may be developed, detailed and implemented. As well as inviting responses to the draft policy, we will consider holding workshops, engaging with key stakeholders. Consultation and engagement will take place over the next three months.