States of Guernsey
Renewable Energy

# RET Strategy – 2017 Onwards

**Vision:** Locally produced renewable sources will provide a growing proportion of Guernsey's energy consumption.

**Mission:** To **research**, **recommend** and **promote** the best renewable energy options for Guernsey.

**Purpose:** Local renewable energy generation will deliver **energy independence** and **greater energy security**, with a **lower environmental impact** than our current approach. The initial purpose will be to provide for **local consumption at competitive prices** with a longer-term view to explore the potential for export.

## Context:

- Guernsey has no macro renewable energy generation.
- Guernsey has no energy independence: our current energy mix is dependent on electricity imported through the cable link from France and imported hydrocarbons.
- Guernsey energy prices are susceptible to fluctuations in the international energy markets, and importation routes too are vulnerable to external factors.
- Solar and wind technologies are viable; tidal and wave technologies are developing but are commercially unproven.
- Guernsey's territorial seas extend only to three nautical miles and the island owns none of the surrounding seabed. The States of Guernsey is seeking to extend the limit to twelve nautical miles and gain control of the seabed.
- Guernsey is included in the UK's international obligation to achieve an 80% reduction in greenhouse gas emissions by 2050 compared with 1990 levels.
    - Guernsey has achieved a 29% reduction to date.
    - Energy generation accounts for around 60% of local greenhouse gas emissions.

**Enablers:** To achieve its vision, RET requires the following:

- A clear and current energy policy for the island. (E&I)
- Public understanding of the benefits and practicalities of locally generated renewable energy. (RET)
- Political support for locally generated renewable energy. (E&I)
- A legislative framework to enable the exploitation of local renewable energy resources. (RET)
- A comprehensive understanding of the environmental resources. (RET)
- A marine spatial plan. (E&I)
- The cost of renewables to become acceptable for the island.

**Actions:** Throughout 2017 and 2018 RET will:

1. Provide support and information for the development of an up-to-date energy policy.
2. Develop and deliver a public awareness and communications plan.
3. Continue to provide assistance to External Affairs to secure territorial seas and seabed control out to twelve nautical miles.
4. Continue to further research into the local wind resource.
5. Maintain and develop links with universities to commission relevant research.
6. Investigate the practicalities of implementing macro solar generation on States land.

Summary of RET's ongoing tasks and objectives:

General

1. Public engagement and communication aligned to a developed communications strategy – look to arise awareness and understanding among the people of Guernsey with regards to the local, and global, position of renewable energy.
    1. Prioritise communication around wind feasibility work
    2. Work with Education and schools directly to provide a Schools awareness programme to share our learning, focussing on the reasons for cable/solar/wind/tide/wave hierarchy.
2. Advise on an updated States Energy Policy with specific regard to macro renewables (LT).
    1. Provide E&I with RET's requirements from the Energy Policy – Q2 2017
    2. Work with others within the States on any reformation of the energy policy – Q3/4 2017
3. Work closely with Guernsey Electricity Ltd. with strategic and objective alignment where appropriate (LT).
4. Investigate how energy storage can affect the viability of large scale renewables in Guernsey (including cost).
    1. Project investigating options – Q2 2017
    2. Working with GEL on detailed understanding
5. Work with External Affairs on Guernsey obtaining control of the seabed and extension of territorial seas to 12 nautical miles
    1. Lobby and Facilitate External Affairs on acquisition
    2. Aim to deliver in accordance with project plan including:
        1. Policy Letter to States of Guernsey by end of 2017.
        2. Prepare business case for MoJ – 2017
        3. Initial discussions with MoJ ahead of formal process – 2017
6. Investigate the financial value associated to security of supply contribution of a given development. – initiate in 2017
7. Understand the wider socio-economic value of renewables to Guernsey (LT)
8. Work with the other Channel Islands and wider international governments to progress renewables including work with the UK (through DECC & BIC) and French governments. (LT)
9. Explore the potential for a renewables research/development base – Long Term Aim. (LT)
10. Encourage and support other renewable projects both within and without the States of Guernsey (LT)

Wind Energy

11. Begin remote sensing monitoring of the wind resource in Guernsey utilising LiDAR equipment that will be in situ at Chouet headland for a minimum of 2 years. –
    1. Installation – Q2/Q3 2017
    2. Monitor Data – Q2/Q3 2017 – Q3 2019
12. Ensure that work on offshore wind continues following recommendations from Xodus report and other projects (including looking to secure wave data if possible/affordable).
13. Closely follow progress in floating offshore wind developments.

Solar Energy

14. Reach a decision on the best/preferred method for progressing a project and/or programme for solar utilising States of Guernsey property assets. This must take into account that funding is unlikely to be provided by States treasury for any project – by end 2017
15. Work with GEL to understand the potential for a joint project (States Land – GEL management) – identify all suitable sites and refine to best options by end 2017
16. Develop 1MW solar capacity on Island by 2020.

Tidal Energy

17. Develop the best mechanisms for Guernsey with regards to leasing of the seabed to a developer (which may include GEL) looking at potential returns, cost, risk and opportunities of supply of electricity to the island or for export – once ownership model of seabed is understood (see point 5).
18. Zone suitable areas for locating marine renewable devices to define what further data is likely to be required – looking to progress by end 2017 and would tie into any Marine Spatial Planning work undertaken by CfE&I.
19. Undertake a gap analysis of work to date highlighting key areas for future study – start Q3/4 2017
20. Keep abreast of key developments including MeyGen, FORCE and the Raz Blanchard
21. Refine the understanding of the marine environment and renewable resources to a level of greater detail in order to accelerate generator deployment. (LT)
22. Undertake to collect data in a manner that is useful to a developer and to provide realistic estimates of power output and generation profiles for Guernsey. (LT)

The following factors are outside RET's control but RET will:

23. Continually investigate access into other electricity markets and their subsidies to make near term marine renewables more viable whilst ensuring that the overall needs of the island are not compromised/ if it is in the best long term interest of the island – continuous. (LT)
24. Follow closely the renewable technologies, the accompanying economics and energy storage such that Guernsey is fully up to date with the industries – continuous. (LT)
25. Understand and monitor the costs of generation of the different renewable generating options. (LT)

Note – there is a more comprehensive strategy document setting out the strategy in more detail.

**Appendix – Assumptions underlying the Strategy**

1. That connection to France via Jersey will continue and that a second link, either direct to France or an additional cable through Jersey will be in place in the early 2020s.
2. Tidal devices have failed to reach maturity as expected (with developers generally now looking at smaller scale devices), and maturity is now expected to be some time in the future (potentially within the 2020s) – with the first array of 6MW only being deployed in late 2016 and no clear projection of when arrays beyond 10-20MW will be installed with meaningful OPEX data. The tidal resource in the Big Russel is of a size which could contribute to Guernsey domestic demand with negligible export.
3. Wave devices are only at prototype stage of development and as such large scale deployment is not expected until into the 2020s at the earliest.
4. There is no appetite for subsidising renewable electricity in Guernsey (although an acknowledgement that there may be some modest increase in the price of electricity to pay for additional security/independence).
5. An agreement is in place until 2022 that Guernsey has access to certified low carbon electricity (Nuclear and Hydroelectric) through the cable link(s) to France, of which 30% is renewable.
6. Offshore wind will not achieve grid parity before at least the early years of the 2020's. Grid parity is where the cost of offshore wind is equal to the cost of other forms of generation, which in Guernsey consist of heavy fuel oil and imported French tariff electricity.
7. Onshore wind is price competitive; however Guernsey does not have the land mass to take advantage of this.
8. Local renewables could contribute to the security of supply and energy independence; but currently at a cost to electricity prices. The issue of security of supply (from a more independent generation source (rather than oil or nuclear generation)) is likely to be more of an issue for Guernsey after the latter part of this decade.
9. Guernsey is likely to have access to/ownership of the 12 mile limit and the seabed by the end of 2019.
10. Electricity represents approximately 30% of Guernsey's annual energy usage (calculated from Guernsey Facts and Figures 2016).
11. Oil prices will remain relatively static (with modest increases from late 2016 levels) and will be available without supply restrictions (n.b. the oil price fell from ~$110/barrel in June 2014 to below $30/barrel in late 2015, and in 2016 recovered modestly to around $53/barrel.).
12. In order to deliver, RET will need the support of the Committee for the Environment and Infrastructure, and also other relevant committees such as Policy and Resources.
13. In order for renewables to provide above baseload electricity production large scale energy storage, or export agreements, will be needed. Neither are likely in the short term.
14. There will be no unforeseen large scale event that will alter peoples thinking on any of the above including:
    a. BREXIT will not substantively change what is outlined above (this will be constantly reviewed)
15. RET will require local support for renewable developments.