Energy Strategy Implementation Plan

Falkland Islands
Government
Environment Department

February 2025

What is the Focus of the Falkland Islands' Energy Transition by 2045?

Our focus is on:

- providing energy independence and security to meet future demand, by replacing existing infrastructure, such as the aging power station, while
- continuing to move away from fossil fuel combustion to cleaner energy sources, by increasing the amount of our electricity produced by renewable means as quickly as possible, through staged investment, which will reduce carbon emissions and air pollution,
- improving the thermal and energy efficiency of our homes, buildings and businesses and shifting their energy use to rely on clean, renewable technologies (e.g. transitioning from kerosene boilers to heat pumps) that reduce indoor air pollution, and
- promoting skills and governance processes, and valuing our people, to enable this transition.

These steps are central to ensuring our vision of secure, clean and affordable energy and maximising the benefits to public health and the environment.

In order to achieve the objectives outlined in the Energy Strategy, and to ensure a smooth energy transition, it will be crucial to align long-term plans and short-term actions across the private and public sectors, as well as the wider community of the Falkland Islands. This includes aligning the timing and capacity of renewable energy generation, storage and distribution with the increasing demands of sustainable home heating and zero-emission vehicles, and the schemes that accelerate these. This will help minimise risk of mismatches between supply and demand, with a staged approach where electricity continues to be available when we need it.

How can we achieve the Falkland Islands' Energy Transition by 2045?

Our Targets

Electricity	Energy Efficiency	Heating	Transport	
Primary energy source 100% renewable by 2045	100% of new buildings & 80% of existing (pre-2027) are thermally efficient to identified standards by 2045	100% of new builds and at least 80% of existing builds with sustainable heating solutions by 2045	All new vehicles are zero emission vehicles by 2045	<20% fossil fuel vehicles in fleet by 2045

In order to achieve the ambitions of the Falkland Islands Energy Strategy we intend to start by:

- Installing 6.9 MW onshore renewable power (wind turbines) by 2030
- Installing 8 MWh of battery storage by 2030
- Building a new power station by 2028
- Upgrade power grid arrangements to maximise efficiency of power transmission and use
- Developing a building standard to make all new homes thermally efficient so as to allow effective operation of sustainable heating by 2026
- Retrofitting 200 existing homes to be thermally efficient by 2027

An engineering-derived estimate of future projections and needed interventions has shaped our understanding of necessary interventions until 2030, with 6.9 MW of wind turbines installed by 2030 (wind Phase 3), as well as 8 MW of battery storage and other essential infrastructure to enable expansion of the wind farm. A new power station will also be needed by 2030 to ensure energy security, initially for sufficient primary provision and phased over time to back-up generation for long periods of low wind and/or solar energy. **But we won't stop there…**

We've developed **a roadmap** that gives our best current estimate of the major steps in our energy transition to 2045.

To check our progress against this and whether we're still on the road to the Energy Future we want, we will include a review mechanism and key periods for review.

A review mechanism is essential, because it is difficult to predict future energy demand with exact precision, especially in the Falkland Islands where a few relatively small developments (by international standards) could have a massive impact on future energy needs. Technology is also evolving at pace and options that are unfeasible at the moment may become feasible in future. Others may become obsolete or less attractive. For these reasons it is necessary to regularly re-evaluate and update projected energy demands and how these will be met, so that we're doing the best for our Islands.

Review will take place every 3 years, starting in 2027 by an energy review group set up by the Chief Executive. This is expected to include relevant technical experts from FIG Public Works, Development and Commercial Services, and Environment. As part of our review, we'll examine how projected demand and generation has aligned with reality (e.g. real load, real generation of Stanley's electricity) over the intervening years. We'll update projections and the best means to meet these over the following five to ten years. Review should also include examining whether additional technologies for energy generation, storage and distribution have advanced making them attractive going forwards, or whether some technologies have proven to be ineffective. Plans and schemes can then be adjusted accordingly. To help this, a suite of key performance indicators and metrics will be collected on an ongoing basis. Review in 2027 will ensure planning for Phase 4 (2035) is real demand-adjusted and considers the most up-to-date information.

Summary reporting will be to the Environment Strategy Programme Board and incorporated into the Environmental Strategy progress reports, as appropriate.

We will continue to take action to build the energy future we want.

As the following sections detail, we will take action and measure our progress to achieve our energy transition and associated targets. Our actions look to:

- Improve our infrastructure to meet future electricity demand and to embrace renewable energy;
- Improve the energy efficiency of our buildings;
- Heat our buildings in a healthier and more environmentally friendly way;
- Leverage our energy transition to promote healthier and environmentally friendly transport;
- Value our people and promote skills to support the energy transition; and
- Update governance processes to support our energy transition.

Some of these actions have already started or been completed but are still included in this plan because they are important components of larger actions. This is reflected in the status column, where **red** indicates the action is not yet started, **orange** is in progress, and **green** indicates this action is complete.

We will improve our infrastructure to meet future electricity demand and to embrace renewable energy.

	Action	Status	Lead	Contributors
Evaluate immediate options for increasing renewable energy provision for Stanley (Phase 3) including expanding Sand Bay Windfarm and installing energy storage. Target of 6.9 MW of wind turbines and 8 MW of energy storage installed by 2030.				
1	Develop capital cost estimate accuracy for wind.		Public Works	Planning and Building Services, Environment.
	-Develop design of wind turbines to be used and produce performance specification to aid in market testing and whole system estimating.			
	-Appoint a concept location for the works to be carried out to determine; installation environment, expected ground conditions, distance from existing infrastructure etc.			
	- Develop a maintenance schedule proposal once system details have been outlined and initially designed.			
2	Develop capital cost estimate accuracy for energy storage systems:		Public Works	Planning and Building Services, Environment.
	-Develop energy storage design and produce performance specifications to aid in market testing and whole system estimating.			
	-Appoint a concept location for the works to be carried out to determine; installation environment, expected ground conditions, distance from existing infrastructure etc.			
	-Form an understanding of existing assets that can be used to store the technology and ancillaries or propose designs for a new facility so that costs can be included.			
	-Develop a procurement strategy for this system to enable an increase in procurement and capital costs and contractor uplifts.			
3	Develop cost estimate accuracy and project plan to install another HV link between Sand Bay and Stanley to increase transmission capacity and redundancy (based on energy generation being increased at Sand Bay site).		Public Works	

	Action	Status	Lead	Contributors
4	Develop capital project cost estimate and project plan for necessary upgrades to distribution network to accommodate new renewable infrastructure.		Public Works	
	- Conduct study on how the existing distribution network (grid) can accommodate new renewable infrastructure.			
	- Develop design and cost estimates.			
	-Develop a procurement strategy to enable an increase in procurement and capital costs and contractor uplifts.			
5	Based on the above, complete implementation of necessary upgrades to infrastructure (incl. generation and distribution network) to implement 6.9 MW of wind turbines and 8 MW of energy storage. This includes:		Public Works	
	- Install wind turbines.			
	- Install battery (energy storage) systems.			
	- Implement / install distribution grid upgrades.			
	- Install HV link between Sand Bay and Stanley to increase transmission capacity and redundancy (based on energy generation being increased at Sand Bay site).			
Evaluate options for further increasing renewable energy provision for Stanley Phase 4 and beyond				
6	Assess existing renewable infrastructure (Phase 1 & 2 turbines):		Public Works	Environment
	- Assess condition of existing turbines and ability to service these with replacement parts to determine actual end of life compared to estimated end of life (2027 and 2030).			
	- On basis of this, determine cost benefit of extending life and plan for ultimate decommissioning of wind turbines (including dealing with waste).			
	- Implement plans for repairs, if appropriate.			
	- Implement plans for decommissioning at end of life.			
7	Assess whether to expand solar energy generation in Phase 4 or later:		Public Works	
	- Install Sand Bay solar trial.			
	- Evaluate data collected from Sand Bay Solar Trial. Include in evaluation key next steps for feasibility and capital cost estimate accuracy for expansion of solar generation.			
8	Evaluate and identify options for further expanding renewable generation for Stanley (Phase 4). Provisional target of additional 4 MW of wind turbines and energy storage installed by 2035.		Public Works	
	- Assess demand & projected demand.			
	- Develop capital cost estimate accuracy for generation, storage and distribution elements.			
	- Develop project plan for installation and maintenance.			
9	Implement further renewable expansion (Stanley; Phase 4)		TBD by review group	
10	On basis of ongoing global technological development, periodically reassess whether any alternative forms of energy generation and storage are feasible for the Falkland Islands.			

	Action	Status	Lead	Contributors
Provide energy independence and security				
11	Build new Stanley power station to replace aged station:		Public Works	Environment
	- Complete concept design.			
	- Obtain political approval.			
	- Complete detailed design (includes installation and maintenance).			
	- Enter construction phase.			
	- Plan to decommission existing power station.			
	- Implement decommissioning of existing power station.			
12	Investigate the use of smart meters on existing and new builds to find solutions for connectivity issues in smart meter functioning.		Public Works	IT; Falkland Islands Development Corporation
13	Assessment of feasibility to roll out smart meters based on the results of connectivity options.		Public Works	IT
14	Identify and mitigate critical risks to Stanley's electrical grid.		Public Works	Emergency Planner
	- Identify single points of failure, potential mitigations, and the value in applying mitigations on a risk-impact, cost, and feasibility basis.			
	- Develop plans in the event of critical failures.			
15	Identify, evaluate, and develop options to help rural businesses and landowners to maintain, replace and/or expand their renewable electrical infrastructure.		Falkland Islands Development Corporation	
16	Update Fox Bay power system.			
	- Complete assessment report on the Fox Bay Power system.		Development and Commercial Services	Public Works
	- Based on above, evaluate and develop a renewable power system and updated distribution network.		Development and Commercial Services	Public Works
	-Installation of renewable power system and updated distribution network.		Development and Commercial Services	Public Works

We will improve the energy efficiency of our buildings.

	Action	Status	Lead	Contributors
17	Improve thermal efficiency of existing government-owned buildings:		Public Works	Environment; Head of Planning and Building Services; Falkland Islands Development Corporation
	- Conduct an engineering study to identify options for energy efficiency and reducing heat loss in commercial/government and private builds. If current resources cannot deliver study then identify suitable external consultancy to provide works.			Environment
	- Identify appropriate thermal efficiency standards for new and existing buildings, which can apply to government and private sector. Standards should be sufficient to allow for the effective use of sustainable heating solutions, such as heat pumps.			
	- On basis of findings, develop programme of works to retrofit government properties (homes) for thermal efficiency with interim targets and KPIs; schemes should target oldest and low-income households first.			Environment
18	Improve thermal efficiency of private homes throughout the Islands:		Falkland Islands Development Corporation	Environment
	- Current grant schemes available for increased thermal efficiency of houses to be targeted towards objectives of the Energy Strategy to allow for a co-ordinated approach.			
	- Design grant schemes, loans, or other mechanisms to address thermal efficiency (weatherisation) of private dwellings and businesses on basis of findings from engineering study in **17.**			
	- Implement above policy instruments (schemes, grants etc.).			
19	Improve thermal efficiency for new developments:		Head of Planning and Building Services	Public Works; Legal
	- Update building standards for new builds to maximise thermal efficiency.			
	- Identify any barriers to new builds implementing thermally efficient standards & options to overcome barriers.			
	- Update the 1999 Building Regulations to prioritise energy efficiency for new builds.			
20	Identify cost-saving potentials with heat recovery and redistribution from the new incinerator & new power station.		Public Works	

We will heat our buildings in a sustainable, healthier and more environmentally friendly way.

	Action	Status	Lead	Contributors
21	Increase sustainable heating solutions for new builds:		Head of Planning and Building Services	Public Works
	- Identify any barriers to new builds implementing sustainable heating options & options to overcome barriers.			
	- Update building standards for new builds to incorporate sustainable heating.			
22	Increase sustainable heating solutions for existing builds:			
	- Scope barriers & options to retrofitting domestic and commercial properties with sustainable heating, including solar thermal for water and heat pumps or similar for home heating.		Falkland Islands Development Corporation	Public Works
	- Scope impacts of sustainable heating retrofit (per building / type of building) on electricity system (demand, grid impacts etc., demand profiles).		Public Works	
	- Develop programme and/or scheme for phased approach to implementation of retrofitting schemes. Programmes or schemes should include a mechanism for periodic review to consider technology advancements / best available technologies.		Falkland Islands Development Corporation	Public Works
	- Continue to measure the performance of the 40 FIG properties with sustainable heating solutions already installed.		Public Works	
	- Assess feasibility of retrofitting government properties and develop informed approach & programme for retrofitting.		Public Works	
	- Monitor sustainable solution (e.g. heat pumps) energy usage of initial installations and use to inform future projected energy demands and overall effectiveness of technology.		Public Works	

We will leverage our energy transition to promote healthier and environmentally friendly transport.

	Action	Status	Lead	Contributors
23	Investigate needs for future electric infrastructure based on different vehicle fleet scenarios (e.g. what happens if 75% of cars in the FI's are electric by 2040?).		Public Works & Falkland Islands Development Corporation	
24	Investigate options to reduce reliance on personal vehicles, including fossil fuel vehicles. Short term: consider promoting passive transport and e-bikes. Long term: consider electrified/non combustion public transport options.		Environment	
	- Assess procurement options for e-bikes and service provider for a passive e-bike exchange programme in central Stanley.		Environment	
	- Depending on the outcome of this, procure e-bike exchange programme.			
	- Investigate options for public transport.		Policy	Environment, Public Works
25	Evaluate options related to charging and home charging of electric vehicles to even-out demand on grid, e.g. timers for home chargers to function during off-peak hours.		Public Works	Falkland Islands Development Corporation

We will value our people and promote skills to support the energy transition.

	Action	Status	Lead	Contributors
26	Ensure community members are upskilled to support the green energy transition: -Assess critical skills required. - Providing opportunities for training and courses in relevant fields such as installing and maintaining renewable energy infrastructure, trades for retrofitting homes or improving thermal efficiency. - Investigate options to provide relevant training and encourage uptake of this.		Education	Environment, Policy, Falkland Islands Development Corporation
27	Encourage the uptake of critical skills by the community, including electrical and mechanical engineering, to support the continued provision of electricity and maintenance of critical public infrastructure: -Ensure Green energy and sustainability is embedded in the relevant STEM curriculum within education. - Awareness raising of opportunities aligning with the implementation of the strategy through the careers service.		Education	Environment, Public Works, and relevant industry members
28	Evaluate and implement approaches to attract and increase retention of skilled and experienced persons within the power and electrical section of FIG, especially critical roles (e.g. evaluate sector competitive pay-scales)		HR	Public Works

We will update governance processes to support our energy transition.

	Action	Status	Lead	Contributors
29	Capital bids required to estimate energy demand of all new major developments and report this to capital programme board as part of the prioritisation of projects.		Development and Commercial Services	Treasury, Public Works
30	Update and formalise policy for connection to Stanley's distribution grid.		Public Works	Head of Planning and Building Services; Legal
	- Evaluate options for and develop electrical connection fees and connection policy for new electricity users in Stanley.			
	- Based on this, update planning and building policy accordingly.			
31	Update and formalise policy for private electricity connections.		Head of Planning and Building Services	Public Works Electrical Public Works Electrical Legal
	- Amend policy to be consistent with not allowing private users to feed electricity back into the grid.			
	- Amend policy to incorporate mechanism to evaluate development proposals' impact on electrical provision in Stanley, with clear mechanism for input to planning process from power station section.			
	- Update policy instruments, as necessary, to accomplish this.			
32	Assess electricity provisioning options for Stanley - i.e. private, semi-private, public.		Public Works	Development and Commercial Services; private sector
33	Evaluate financing options for energy transition / large scale green energy infrastructure, e.g. green bonds.		Treasury	
34	Build whole of life costing, consideration of critical redundancies and dependencies into evaluation of capital projects.		Development and Commercial Services	All
35	Consider economic, environmental and social costs and benefits when evaluating alternatives, as far as possible.			All
36	Assess the best available technology for each project.		All	

To help us monitor our progress we will collect metrics to show progress against our targets. These include:

Electricity			Energy Efficiency			Heating			Transport	
Primary energy source 100% renewable by 2045			**100% of new buildings & 80% of existing (pre-2027) are thermally efficient to identified standards by 2045**			**100% of new builds and at least 80% of existing builds with sustainable heating solutions by 2045**			**All new vehicles are zero emission vehicles by 2045**	**<20% fossil fuel vehicles in fleet by 2045**
% of Stanley's power available from renewable sources	% of Stanley's power delivered by renewable sources	% of Camp primary residences and businesses with renewable primary energy supply in 2045	number of FIG homes retrofitted to thermal efficiency standards	number of private homes retrofitted to thermal efficiency standards	number of new builds built to thermal efficiency standards	number of new builds fitted with sustainable heating solutions	% of new builds fitted with sustainable heating solutions	number of properties retrofitted with sustainable heating solutions	number of registered zero emission vehicles	number of registered fossil fuel vehicles

The Falkland Islands Energy Strategy Implementation Plan

Falkland Islands Government

February 2025

This report and the associated Falkland Islands Energy Strategy can be found on the Falkland Islands Government webpage. https://www.falklands.gov.fk/policy/environment

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