

**Project Title: Hydrocarbon Supply**

**Strategic Outline Programme (SOP)**

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## VERSION HISTORY

Version	Date Issued	Brief Summary of Change	Owner's Name
Draft	29 Jan 14	First Draft Version	
1.0	6 Mar 14	Numerous	
1.1	13 Mar 14	Draft after GW 0 review	
2.0	21 Mar 14	Final peer review - various minor amendments	
2.1	7 April 14	Amendments to suit SCIP comments	

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- B Build-up of the expenditure projection

## 1. Executive summary

The purpose of this programme is to develop a secure future hydrocarbon supply for the Island.

Community and economic life on Guernsey is dependent on the timely delivery of hydrocarbon fuels (petrol, diesel, kerosene, aviation fuel, heavy oil) for transport, heating and electricity.

The way the fuels are uploaded onto the Island has some unique elements and challenges. These include a harbour with; an approach with strong tidal currents, strict limits on ship length and draught, access only during spring tides, a narrow harbour mouth, berths which dry out, discharge facilities relatively close to residential properties and a need to use specialised tankships which can rest on the harbour bed.

For a host of reasons this arrangement is not sustainable. It creates significant vulnerabilities in the short-and medium-term whereby a single event could result in the supply mechanism being severely disrupted.

This risk has long been recognised and has led to the production of initial designs for a deep water berth outside of St Sampson's harbour. Such a facility would address many of the known risks and improve reliability as access would not be limited to spring tides and bespoke ships.

It is however recognised that this is not just about constructing an uploading facility. The arrival of a tankship into the harbour is but one element in a chain which includes the oil refineries from where the cargo has been collected, the sea transport, the berthing/uploading facilities, the land-based storage tanks and finally the distribution arrangements to houses, forecourts, power station etc. If any of these breakdown the whole system is at risk of failing with potentially catastrophic implications for the local economy and community. The separate components are inextricably linked, as for example, the amount that can be uploaded is limited to the size of the fuel storage tanks.

To ensure a comprehensive and best value infrastructure solution is achieved it will be necessary to consider all these various elements and the resultant solution is likely to involve a combination of projects, hence this is being classified as a programme of work.

The next stage of this programme is to develop a list of options covering a range of delivery methods and total storage capacity and then to work towards a programme blueprint with a preferred option for the future supply of hydrocarbons to the Island.

External advisors will be used to provide specialist assistance on options for a secure hydrocarbon supply and for the development of the necessary projects.

<b>Investment Objective</b>	<b>Critical Success Factor</b>	<b>Measure</b>
Security of supply	On-Island fuel storage maintained above defined strategic levels in line with the security of supply strategy to mitigate against disruption in event of delays in delivery	98% of the time
Reliability of supply	Fuel available when required and without rationing	Always
Value for Money	Optimal (economic and strategic) solution implemented to secure supplies	Achieved at a whole-life cost equal or less than comparable facilities in other jurisdictions. All elements are competitively tendered.
Minimizing safety risks to the Island	Reduce number of households and businesses within Development Protection Zone (DPZ) around the fuel storage tanks  Reduce number of households and businesses within unloading berth blast zones	80% reduction  80% reduction
Minimizing environmental risks	Reduce use of NAABSA berths and improve ease of navigation for delivery vessels.	Provide always afloat facility with an anticipated up time for access of 50% or better.

This Programme will lead to a full analysis of the options to address the vulnerability of Guernsey's current hydrocarbon supply arrangements. The programme must be driven forward without delay, but equally at a speed that ensures due consideration of all the factors and stakeholder interests.

The preparatory work including investigations, studies and modelling is expected to take 2-3 years at a cost of up to £3m, in the context of an overall scheme provisionally estimated to be in the region of £110m. External circumstances could lead to a need to accelerate progress and carry out basic 'enabling works' prior to the next SCIP debate in 2017. For this reason the estimate of £10m in the current period was originally outlined. For cash flow planning this has been revised down but this SOP is flagging the possibility that the higher spend might prove necessary should external events so dictate.

The delivery of this programme is critical and is affects the interests of several Departments and spans 3 political terms. This SOP therefore identifies a case for the States of Guernsey to give prime mandated responsibility and empowerment to one Department for ensuring the Island has a robust hydrocarbon supply chain. This would be in order to minimise the risk of

progress on a solution being unduly delayed by in inter-departmental differences of opinion and priorities. Other departments with vested interests would continue their involvement as key stakeholders.

## **2. Purpose**

The vision of this programme is to ensure the secure supply of hydrocarbons in the Island.

### **3. Strategic case**

#### **3.1 Business need**

The Island relies on hydrocarbon fuels for transport, heating and electricity generation. Shortage of these fuels could see rationing of petrol and heating oil and, if the electricity cable link was down, power cuts. This would adversely affect the island's reputation and desirability as a place to live and work. Should fuels completely run out the island would suffer severe social disruption and potentially irreversible business, economic and reputational damage. The business need is therefore to ensure the secure supply of hydrocarbon fuels to the Island.

Modelling of future demand shows a slow rise in average demand with the actual imports in any one year relying heavily on the consumption at the power station. Total imports are forecast to increase from 128,000 tonne (t) in 2019 to 149,000 t in 2059. Within that timescale there could be significant changes to the use of renewables and the mix of fuels. However while there is any demand for hydrocarbon fuels the Island will need a facility to import them. The only part of the supply chain that will be directly linked to consumption will be the storage facility. The import facilities will need to be of a size and scale to match the size of the delivery vessels rather than the number of times the vessels visit each year.

There are a number of problems with, and threats to, the current arrangements. Firstly the restricted access to St. Sampson's harbour has resulted, on occasion, in a number of planned shipments not being able to berth with the result that the Island has almost run out of some fuels. Secondly there are legislative and commercial pressures which could rule out the use of drying berths in the future. The issues of the drying berth are principally safety and security. It is beneficial for a fuel vessel to remain afloat so that in the event of a fire, the hull will be cooled by the surrounding water and if mobile, it can be moved as far as practical away from areas of population. Of equal importance is the ability for the vessel to move away from the berth in the event of a fire on the shore which could otherwise affect the vessel.

This programme therefore is not for the renewal of existing facilities but for a rigorous examination of every element of the supply chain to ensure a secure and reliable hydrocarbon supply. This will cover not only the physical facilities but also their ownership and operation. To allow for possible changes in fuels in the future a solution is required which allows, as much as is practical, for future alterations or additions.

The programme will consider the on-island storage requirements (capacity and location) to ensure they are suitable for the long term. If tanker ships are used to deliver the fuel then the design of the facilities will seek to strike a balance between the availability of the facility to accept and unload tanker ships (which will be a function of acceptable sea conditions, location and the effectiveness of any breakwaters or other structures) and the storage capacity to be provided on-island. A relevant question is whether it is more effective to spend additional money on breakwaters to protect the facility and improve its availability or on additional storage capacity to cover for extended periods when weather conditions rule out access to the berth. If a pipeline was the preferred delivery method then the delivery

risks to be covered by on-island storage would include damage to the pipelines and stopping of supply by commercial, industrial or political action.

### **3.2 Organisation overview**

The scheme is currently being led by the Public Services Department (PSD) on the basis of its' mandated responsibility for the harbours and maritime matters. It also plays a key role in the provision of major public infrastructure.

The Department has established a programme board which will be a key part of the required governance.

It is however recognised that what the programme will achieve, transcends the normal boundaries of departmental responsibility within the States of Guernsey. While the Public Services Department has lead responsibility for berthing of ships, the Commerce and Employment Department oversees energy supplies and economic well-being and the Treasury and Resources Department acts as the shareholder of the company which owns the only two tank-ships which can deliver most of the required hydrocarbons. That Department also controls land at Longue Hougue which may be needed for the erection of new fuel storage tanks. In addition these Strategic Land Planning Group of the Policy Council is a key stakeholder. The Civil Contingencies Authority will have an interest given the strategic vulnerabilities associated with current hydrocarbon supply arrangements. As well as this there will be the 'regulatory' roles of parties such as the Environment Department in respect of planning consent.

Clearly this long list only covers those parties within the States of Guernsey. There are of course many others important stakeholders, most significantly the fuel supply companies, but also refineries, ship charterers, insurers, residents, etc.

There is a distinct risk that in the absence of one Department having been given clear mandated responsibility progress in delivering the right solution will be slow and painstaking, with the potential for any number of parties to prevent the projects proceeding. It is a programme that will span three political terms highlighting the need for clarity and drive from start to finish.

It will therefore be appropriate for the Policy Council to consider whether to ask the States, in agreeing to this programme, to ensure mandated responsibility for delivery is vested in a single political body (but still retaining the regulatory powers of parties such as the Environment Department to judge on planning issues).

The programme will have a robust and comprehensive communications plan, including a mechanism for regular and relevant engagement with key stakeholders.

### 3.3 Strategy and programme investment aims

The programme will help secure the Island's economic future.

The high level strategic aims for this programme are captured most concisely in the States of Guernsey Energy Resource Plan. A draft States Report, issued in March 2014, titled "Future Strategy for Energy Supply" recommends that on-island fossil fuel powered generation capacity is maintained and also recognises security of fuel supply as a principal risk for this strategy. The potential for Land Planning change is also captured in the Strategic Land Use Plan.

#### States of Guernsey Energy Resource Plan, states:-

##### Oil Imports

- 6.35. Rubis and Total, the Island's two oil importers rely on the two, States owned, "Sarnia" tankers, which from a safety perspective may only be able to operate in Guernsey waters for another 10 years due to changes in international standards. A deep water berth or similar solution might be the long term objective to ensure a selection of vessels, from different operators, are always available to supply into Guernsey. The current situation increases the risk of supply difficulties due to safety related issues. This is not believed to be viable without a suitable deep water berth able to take larger capacity vessels.
- 6.36. Currently both oil importers rely on one shipping company and there a limited number of vessels capable of discharging in St Sampson's harbour. This latter point exposes Guernsey to a high risk. For example should refineries reject the vessels and/or the operator for any safety related reason, the Island would be left in a critical supply situation almost overnight. This "supply critical" situation has already been experienced in recent years and for prolonged periods of time although these critical situations occurred prior to the States of Guernsey acquiring the Sarnia Cherie and Sarnia Liberty.
- 6.37. Tidal conditions in St Sampson's Harbour mean that there are significant periods of time, when vessels cannot dock and if a tidal window is missed, due to operational problems and weather conditions, delays, typically over a week in duration, can be all too common. This puts the basic security of supply at risk, and should this ever occur to both oil importers simultaneously, then supplies could be expected to be exhausted relatively quickly. Neither location has sufficient land or cost justification (in the current market) for significant additional storage to reduce this risk.
- 6.38. There are also risks that are encountered when discharging fuel vessels in a built up environment with no ability to move a vessel somewhere safer due to the Not Always Afloat But Safely Aground (NAABSA) nature of the harbour. Land is a finite and extremely valuable resource in an Island such as Guernsey and we need to ensure that we take into account competing demands for this resource so that we maximise the benefit to the Island. In addition, the existing fossil fuel storage sites have development exclusion areas known as Development Proximity Zones (DPZs). The removal of the fuel storage and therefore the DPZs could potentially free up existing land for development for other uses.

- 6.39. Maintaining or improving the security of supply also means regular investments from the energy players. Such investments can only be implemented if a level playing field for all energy suppliers is in place and the overall market place is equitable and balanced. The desire to move to different fuels for vehicles (e.g. compressed gas or hydrogen) would require major investments in the fuel delivery infrastructure. The absence of a natural gas direct supply line aggravates this situation. Other alternative fuels for vehicles (e.g. electric) may have a lesser effect on the delivery infrastructure. The promotion/ distribution of bio-fuels should require less investment if the existing liquid fuel distributors are involved in the supply chain. Production of bio fuels on Island has not been identified as a preferred option, given the absence of suitable quantities of raw materials or land.
- 6.40. The emerging use of Bio Fuel presents several key issues for Guernsey. Most European refineries are currently phasing out non bio fuel production (as all of Europe must have bio fuel components added), so sourcing supplies will become increasingly more difficult, and probably attract premium prices from refineries. Any potential introduction of bio fuels would introduce several changes and risks for the oil importers to manage. In the first instance petrol blended with ethanol (the bio component for petrol) cannot be transported by sea. This would result in the import of ethanol into Guernsey, and its associated storage prior to blending on the Island. This external development in the supply chain could potentially require additional pipelines to both terminal locations and additional storage tankage. Secondly the bio component of Diesel (FAME) is suitable for road diesel but can impact heating/ marine applications. Bio fuels have a considerable cost implication to the refinery, and throughout Europe, where the Bio Fuel duty is reduced to ensure the economic viability of bio fuels. This would be required on Guernsey to eliminate the cost differences and significant investment required in both terminals.

#### Draft States Report on Future Strategy for Energy Supply

- 1.12 The report contains a review of renewable generation options. The review concludes that renewables are unlikely to make a major impact upon local supplies until the next decade at the earliest, but recognises that the island has significant renewable resources. The report therefore focusses on local fossil fuelled generation which, for the time being, provides the island with security and diversifies its risk, since the principal risk associated with local fossil fuelled generation is in obtaining the fuel itself.

## Strategic Land Use Plan

### **Harbours**

The harbours at St Peter Port and St Sampson provide key infrastructure not only for the continuing import and export of goods and raw materials, but also in support of visiting yachts, cruise liners and commercial ferries. St Peter Port Harbour is the point of entry for the vast majority of the Island's foodstuffs and is a gateway to Guernsey for passengers visiting the Island by ferry.

The 'Main Centre Vitality and Viability' section (Policy LP8) identifies potential opportunities that may exist to co-ordinate States and private sector initiatives that could harness investment in the operational aspects of the main harbours.

The Island's fuel supplies are currently brought in through the tidal harbour at St Sampson. Volatile fuels are imported by means of a flat-bottomed ship that is able to take to the harbour floor during low tide and unload directly into a piped network feeding holding tanks at Northside and Southside. This situation is far from ideal but can only be addressed by either switching the importing of fuels to St Peter Port and addressing inherent problems that would arise, or constructing new deep water berths on the east coast of the Island.

This is a matter currently under investigation by the Public Services Department but from a land use perspective, the Development Plans will need to make provision should the development of new deep water berths and associated land reclamation be required, in the event that this is determined to be the most appropriate strategy for the importation of fuel and other goods.

The Environment Department, Public Services Department and other relevant States departments should work closely with the private sector to prepare an appropriate Harbour Strategy.

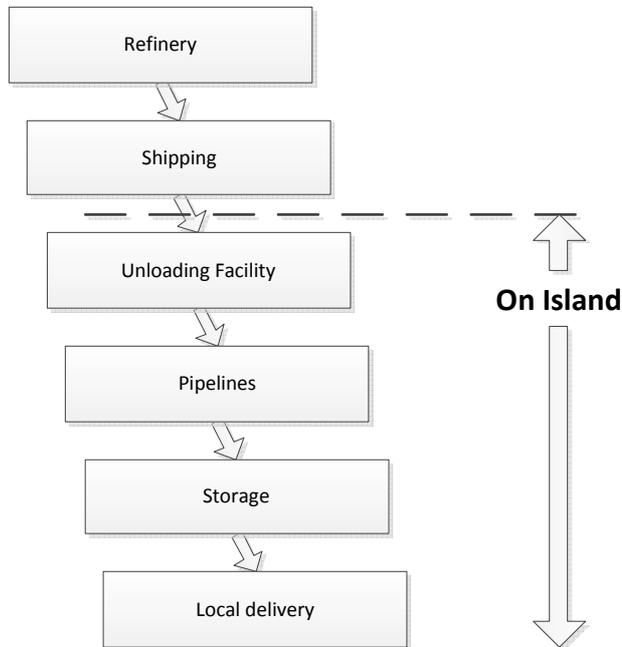
This document will identify the short, medium and longer term needs of the ports and balance the need to make provision for essential harbour-related development to ensure the continued successful operation of the harbours with identified opportunities to meet wider States economic, social and environmental objectives.

#### **Policy SLP39**

In the event that the States agree that the development of new deep water berths and associated land reclamation on the east coast of the Island is required, the Development Plans will put in place appropriate policies to enable this. Through corporate working and forging appropriate public and private partnerships, the States will prepare a strategy for the harbours that enables essential operational harbour development and additional forms of development that is able to meet economic, social and environmental objectives of the States.

### 3.4 Existing arrangements

In simple terms the supply route for hydrocarbons from refinery to end users in the Island is:



This shows that the unloading facility is only a part of the infrastructure required to provide a secure hydrocarbon supply. The programme will address the entire supply chain. All elements are linked, for example decisions on the type and size of the unloading facility will affect the type and capacity of shipping that can be used and also whether refineries will supply those ships. They will also influence the sizing of the pipelines and the capacity of the storage tanks.

Currently hydrocarbon fuels are delivered in ships that can be Not Always Afloat But Safely Aground (NAABSA). The Energy Resource Plan and a report “Petroleum Product Supply Chain Logistics & Economics” identify risks that legislative and supply chain issues may rule this out as a continuing option. The use of the existing berths is limited by tidal restrictions and weather conditions. Poor weather during a tidal window can defer deliveries to the subsequent or later tidal windows.

The existing arrangements relate to a number of risks in the Bailiwick Risk Register;

- Fire or explosion at gas terminal including onshore pipeline
- Fire or explosion at a fuel distribution or tank storage site
- Fire or explosion at tanker berth
- Marine Pollution
- Loss of essential supplies

As noted in Clause 6.38 of the Energy Resource Plan the Development Proximity Zone (DPZ) associated with the current storage arrangements restricts the allowable uses of commercial and industrial land surrounding the storage.

### **3.5 Potential scope and service requirements**

The potential scope of the programme extends from the delivery of hydrocarbons to the Island to the dispatch of fuels from the on-island storage to the consumer. It includes not only the infrastructure but how that is procured and operated. What should the State own and what should be provided by the private sector? Security of supply is improved by de-risking the whole supply chain.

The Energy Resource Plan suggests that the delivery would be de-risked by having an unloading facility available to a selection of vessels from different operators.

### **3.6 Benefits, risks, dependencies and constraints**

#### Benefits

- Ensuring a secure and reliable supply of hydrocarbons to the Island
- Reducing risks of non supply relating to the delivery and storage of hydrocarbon fuels
- Increased availability to supply due to reduced constraints from tides and weather
- Improved supply chain logistics and planning i.e. delivery lead times reduced from up to 10 days to up to 2 days. (equivalent of just in time delivery)
- Increased options for shipping due to fewer constraints on vessel delivery type
- Reduced operational risk

#### Risks

- Refineries will no longer load NAABSA ships for Guernsey either for legislative or commercial (risk) reasons
- NAABSA ships reach end of life without replacement
- Cost uncertainty
- Early failure of the implemented solution
- Developing a solution that is not aligned to industry direction, growth and practices i.e. leading/bleeding edge
- Failure of one element of the supply chain (business failure, physical infrastructure failure or commercial decision to withdraw from the business.)
- Rapid changes in fuel types or regulations exceed the supply chain's ability or desire to change
- Lack of clarity about which Department is accountable and empowered to deliver leads to solution not being ready in time

## Dependencies

- Funding
- Industry engagement
- Public engagement
- Identifying the appropriate skilled and experienced consultants

## Constraints

- Capital
- Resources
- Inadequate mandate (cross departmental)
- Surrounding Developments
- Waste Facilities at Longue Hougue
- Completion of Longue Hougue infill
- Development Proximity Zones
- Island topography and hydrography
- Tidal and environmental conditions
- Fuel industry practices /investment appetite / commercial influence

A copy of the current Programme risk assessment is in Annex A.

## Investment Aim

The investment aims of the programme are;

- Security of supply of fuels to customers
- Reliability of supply of fuels to customers
- Achieve Value for Money
- Minimizing safety and environmental risks to the Island

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Reliability of supply	Fuel available when required and without rationing	Always
Value for Money	Optimal (economic and strategic) solution implemented to secure supplies	Achieved at a whole-life cost equal or less than comparable facilities in other jurisdictions. All elements are competitively tendered.
Minimizing safety risks to the Island	Reduce number of households and businesses within Development Protection Zone (DPZ) around the fuel storage tanks  Reduce number of households and businesses within unloading berth blast zones	80% reduction  80% reduction
Minimizing environmental risks	Reduce use of NAABSA berths and improve ease of navigation for delivery vessels.	Provide always afloat facility with an anticipated up time for access of 50% or better.

This may or may not include the development of an 'always afloat' berth for the delivery of liquid fuels by tanker ship.

## **4. Economic case**

### **4.1 Critical success factors**

That the minimum quantity of Hydrocarbons stored on Island, of all types, meets the strategic targets set by the States . There is likely to be a higher, target minimum, quantity of fuel to allow for standard supply delays (loading, navigation and unloading). Exact performance criteria are to be agreed but may be similar to;

Stored fuel should not drop below the target minimum more than once a year and the statistical probability of the Island having to use any of its strategic reserve for other than Force Majeure type risks is maintained at less than 5% in any one year.

Value for Money will be achieved by ensuring that the scope of the programme and the associated projects is optimal (economically and strategically) and that both the capital and operational contracts are competitively tendered.

The risk of damage to life or property in the vicinity of the fuel uploading and storage sites is reduced by 80% from the current arrangements.

### **4.2 Main options**

There are a number of different areas where options need to be considered. The scope and possible solutions for each main element of the supply chain include;

#### **Refinery**

Purchasing a refinery, or establishing one in Guernsey, is impractical however ensuring that a number of refineries are prepared to supply the Island is prudent and may also introduce competition in to the supply of fuel to the shipping companies.

#### **Shipping**

Currently the Island is served by NAABSA ships provided by a company wholly owned by the States of Guernsey. Options for the future unloading facilities will have fewer restrictions on the type of shipping that can use it. Shipping options could therefore include operating our own ships, renting ships or contracting with a commercial operator to provide shipping between the refinery and the port.

## **Unloading facilities**

Options include;

### Pipeline from another jurisdiction

This would either be a remote unloading point for tankers or connected to a fuel store (France or Jersey). The pipeline could require multiple pipes to allow the delivery of different fuel types and/or from multiple locations for security. It would suffer the risks that the pipe(s) could be damaged and also that we would not have ultimate control of the far end of the pipe unless it was in the Bailiwick.

### Single Point mooring

This would have a seabed pipeline to a mooring point. If this could be achieved it should be a lower cost option but would require a suitable location for vessels to be able to swing around 360° at all states of the tide and also in a location that has sufficient protection from the weather so that the mooring has adequate year-around availability. There would be a risk of damage to the seabed pipe or the riser up to the mooring and there would remain a requirement for multiple pipes some potentially with heating or booster pumps at points.

### Dedicated hydrocarbon jetty

This option has been investigated in some detail in both the Future Harbour Requirements report and the Ports Master Plan. It is conventional and would be usable by the largest portion of the available tanker fleet. All pipelines and unloading facilities would be out of the sea and accessible from land significantly easing operation, maintenance and repair.

### Multi-use berth

Similar to the dedicated jetty but capable of being used for multiple ship types – most probably loose bulk cargo and load-on load-off freight vessels. The berthing face against which the vessel would tie up can be shared but otherwise the facilities needed by the bulk materials (such as sand/aggregate) and standard freight are quite different. A hydrocarbon berth may be as simple as concrete mooring dolphins with a central unloading point and some form of bridge leading back to land. However a bulk or lo-lo berth will invariably need a heavy duty solid platform on which cranes can operate, goods can be stored and delivery vehicles can run.

## **Pipelines to Storage**

These will have to run from the ship connection points to the storage tanks. The number and throughput capacity will be comparatively easy to assess. The main options will revolve around ownership and operation. These points being considered more generally below.

## **Fuel Storage**

### Location

There are fuel storage tanks at three different locations. At the power station, at Northside (near Vale Castle) and at Bulwer Avenue. It is likely that fuels for the power station will remain stored near to the generating plant but changing the location of storage of other fuels could be considered. The DPZ areas associated with the current tanks at Bulwer Avenue encompass many industrial and some retail premises and relocation gives the opportunity for planning benefit and also reducing the risks from any incident at the storage facility. The most obvious area for relocation is to Longue Hougue, probably in the north east corner.

### Capacity

The current capacity does not allow the Island to meet recognised stock levels for most types of petroleum products [EU Directive 2009/119/EC - 90 days average daily consumption]. Indeed UK compulsory stock levels of 58 days are achieved for petroleum products only when the tanks are absolutely full whilst diesel and kerosene have stock levels of 69 and 74 days under the same conditions.

The existing storage is owned by the fuel distributors and to increase the capacity will incur capital costs and also require a greater investment in stock to maintain higher stock levels than currently. There is likely to be a conflict between commercially optimum stock levels and those desired by the State for security of supply.

The overall capacity will have to be divided between the different types of fuels. This will have to recognize the current mix of fuels and also possible future trends, such as bio-fuels. This suggests a larger number of small tanks to give this flexibility. The total capacity also has to allow, as a minimum, for a delivery of fuel to be stored in addition to the minimum stock level.

## **Local Delivery**

For road transport fuels there is a large network of primarily independently owned garage forecourts. The forecourts are supplied by two distributors who also supply and deliver heating oils. There does not seem to be any reason to interfere with this existing arrangement, other than to ensure the States has step-in powers in exceptional circumstances.

## **Ownership**

There are a number of options that apply for the ownership of the Berth, Pipeline, Storage facilities and the Hydrocarbon fuels themselves. A different ownership could apply to each. Options include direct States ownership, a States trading entity, a special purpose company owned by the States, a Private Public Partnership or private ownership. Different ownership models will also open up different funding and charging mechanisms.

For maximum security the States would want to own the berth, pipeline, storage facility and the fuel itself.

## **Operation**

There are a similar range of options for the operation of the facilities. These have to be considered against the Critical Success Factors which include security and reliability of supply as well as cost. Many of these concerns could be resolved by ensuring that contracts with operators allow the States to step in to ensure that facilities continue to be operated in the event of contractual default by an operator.

## **Ancillary Facilities**

As mentioned in the multi-use berth discussion above there are a number of ancillary facilities which could be provided in association with the Hydrocarbon programme. These include facilities for Bulk cargoes, Lo-Lo, Ro-Ro and Cruise liners. Neither the Ro-Ro nor Cruise liners were considered as options in the Future Harbour Requirements Report or the Ports Master Plan. It is considered extremely unlikely that Cruise ships (or Visit Guernsey) would prefer passengers to disembark at the industrial area in St. Sampson rather than within walking distance of the old harbour at St. Peter Port.

Despite these being ancillary to the hydrocarbon supply it is obvious that opportunities for enhancing the facilities to allow other uses should be checked to ensure that opportunities to expand the scope of the programme to deliver improved value for money are not missed.

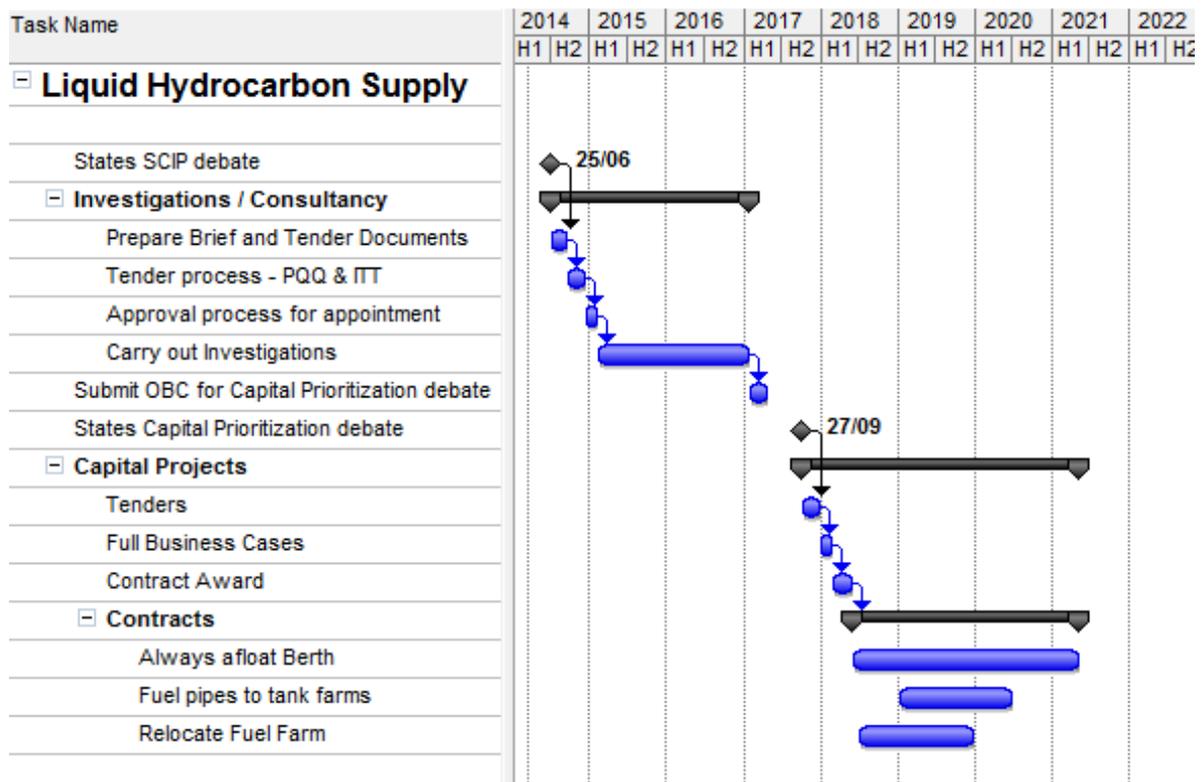
Given this wide range of options it is not yet practicable to long list possible solutions. Rather an early task will be to review and develop the options to ensure that the lists are complete and appropriate.

Any harbour or port installation and most fuel storage developments require a screening opinion as to whether an EIA is required [The Land Planning and Development

(Environmental Impact Assessment) Ordinance, 2007]. Given the size of the development, its position on the coast and the potential impact of any accident, all of which are factors, within Schedule 4, that have to be considered when deciding if an EIA is required, it is thought likely that an EIA will be required for the developments.

### 4.3 Preferred way forward

A high level programme, assuming that a berth is constructed for unloading tanker ships, could be:



In theory the Programme will not have to return to the States after it is accepted into the 2018 – 2021 SCIP. However it is possible that the States will use its discretion and require that individual Projects within the programme return to the States before Contracts are signed.

### 4.4 Implementation

Implementation could be complex, however the preference is to leave the existing facilities in an operational condition until the new facilities themselves are fully operational and proven to work reliably.

## **5. Commercial case**

### **5.1 Commercial strategy**

The private sector is responsible for the supply of hydrocarbons to the Island. Currently they use facilities owned by the States of Guernsey to unload the delivery vessels. The development of a secure future supply will inevitably require co-ordination between the private sector and the States and there might well be opportunities for supply side investment in the future facilities.

This will have to balance the benefits of private funding against the risks regarding ownership of critical infrastructure.

### **5.2 Procurement strategy**

The procurement of the advisors will follow the States of Guernsey Procurement Guidelines. It is probable that the type of contract documentation to be used would be NEC PSC [Professional Services Contract] instead of the States' standard consultancy appointment terms and conditions given the likely value of the appointment.

The Procurement strategy for other Projects in the Programme will be developed during the investigations of options and more specifically through procurement workshops once the technically preferred option has been identified.

## 6. Financial case

### 6.1 Indicative cost

Consultancy:

There are a number of previous studies investigating the feasibility and outline design of a commercial port at St. Sampson. There are also more recent investigations such as the Future Harbour Requirements which included a review of options for hydrocarbon berths at St. Sampson.

#### Original investigations into a commercial port at St. Sampson.

In 1988 £294,000 was voted by the States and a further £55,000 from the consultant's vote.

In 1999 there was a quote for £236,000 from HR for physical model studies and navigation simulation. This work was undertaken. There was also consultancy support by WSP understood to be in the region of £100,000.

Allowing for inflation [124% since 1988 and 45% since 1999] gives a reflatd total cost of £1,270,000.

Part of this work will be reusable (seabed surveys, current and wave modelling) but the extent depends on the exact location of the berths or other uploading facility.

The cost of the Future Harbour Requirements investigations was £50,000

#### Discussion

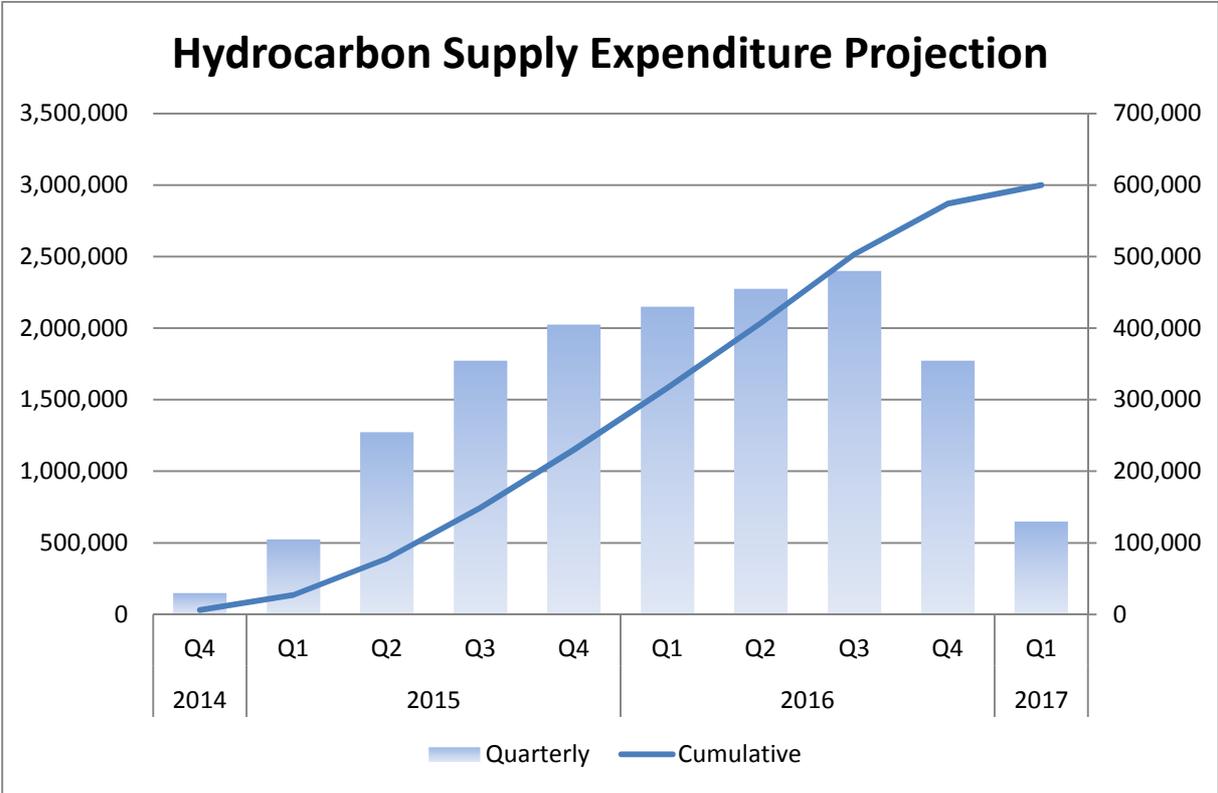
The costs above relate only to the unloading facility. The programme's vision is the secure supply of hydrocarbons rather than the construction of a deep water berth. Investigations, firstly into long list options but then through short list and on to the preferred solution will have to cover a much broader scope and involve much more stakeholder liaison than the previous schemes which concentrated solely on the provision of berth facilities.

Many of the steps in the supply chain will require specialist assistance (single point moorings, pipelines) as well as general programme and project management. There is also a high likelihood that an Environmental Impact Assessment (EIA) will be required.

These will all increase the budget. The more formal project management procedures, including monthly reports and development of the Strategic Outline Case and Outline Business Case (OBC) although beneficial to the effective delivery of the project will also tend to add cost to the initial investigations.

Based on the previous costs, the additional extent of the work and allowing a prudent contingency a budget allowance of £3.0m for the unloading facilities is considered

appropriate for investigations work leading up to the development of an OBC and EIA for the preferred solution for future hydrocarbon supply.



A copy of the build-up of the expenditure projection in in Annex B.

**Construction Projects**

There is a great deal of uncertainty about the extent of the work which will be required. The Ports Master Plan and the Future Harbour Requirements report both included an estimate for a hydrocarbon berth. At the lower ranges the estimates were in the region of £70m - £130m.

This estimate does not allow for any works to the on island facilities such as pipelines and storage nor does it allow for any ancillary facilities. It also does not reflect any savings or capital receipt that may be available from the sale of the States owned tanker-ships.

Until there is a clearer idea of the realistic shortlist of options it is very difficult to provide cost estimates with any greater degree of confidence. To be clear the current estimate is based on the estimated cost of a deep water berth and not for the full scope of the secure hydrocarbon supply programme. However if the hydrocarbon berth (if that is what is selected as an import facility) is at the lower end of the range of estimates then it could be that the full programme is completed within the current Capital Cost estimate of £110m.

The breakdown of this figure is £3m for the development of the programme and associated projects up to the 2017 SCIP debate and £100m for works in the 2018 – 2021 period with currently £7m being allowed for the management and supervision of those works.

## **6.2 Funding arrangements**

In the initial years the programme will be funded from States capital provision. When it becomes clearer what solution(s) and combination of projects are required further consideration will be given to funding. Options will include government funding, public private partnerships, certain elements being or remaining entirely privately funded and funding from usage fees of the facilities.

## **6.3 Affordability**

Costs have to be controlled to provide the necessary fuel security at the optimum cost. The States will have to decide if the fuel security is worth the expense.

**7. Management case**

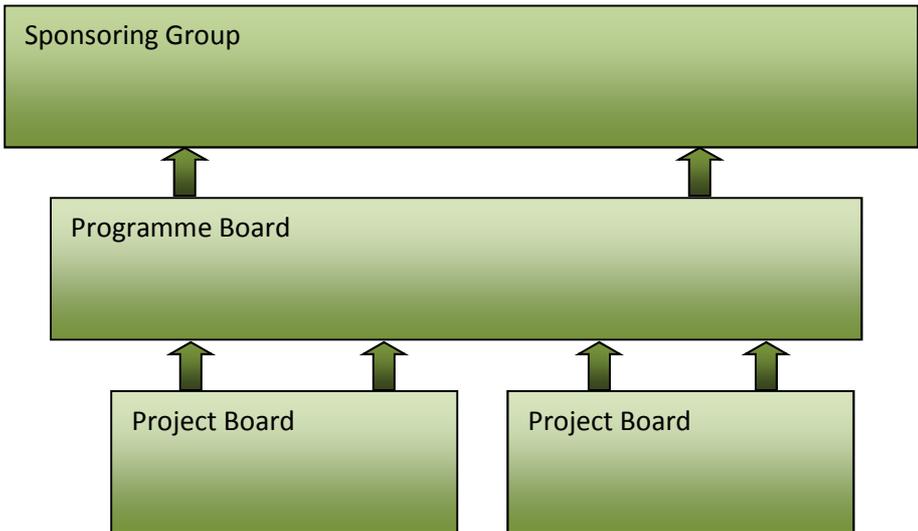
**7.1 Programme management arrangements**

The programme will be managed to comply with States of Guernsey resolutions, policies, rules and directives.

Broadly this will see the Programme managed in accordance with ‘Managing Successful Programmes’ principles with individual projects following a Prince2 approach.

As explained earlier achieving security of the Island’s hydrocarbon supply straddles the mandates of several States bodies. This requires further consideration to determine whether clearer direction from the States is required to ensure the programme does not become bogged down between differing departmental level interests, or priorities. At this stage the Sponsoring Group is the Board of the Public Services Department and the Senior Responsible Officer is the Chief Officer of the Public Services Department.

**Programme Structure**



The Sponsoring Group has agreed the programme structure and the starting membership of the Programme Board. This comprises the Senior Responsible Officer, political representation from both PSD and T&R (requested), Officers such as the Programme Director, Business Change Manager, interim Programme Manager, Programme Accountant and Programme Communications and a legal adviser (contracts) providing support.

The Commerce and Employment Department has a mandated responsibility for the utilities an interest in promoting all sectors of the economy. Their Economic Development Unit has security of supply of energy/fuel/essential commodities as one of its priorities for 2014. They

will be a key stakeholder but, at this stage, have not been included on the Programme Board. If a more cross departmental approach is desired then there might be a case for reviewing this.

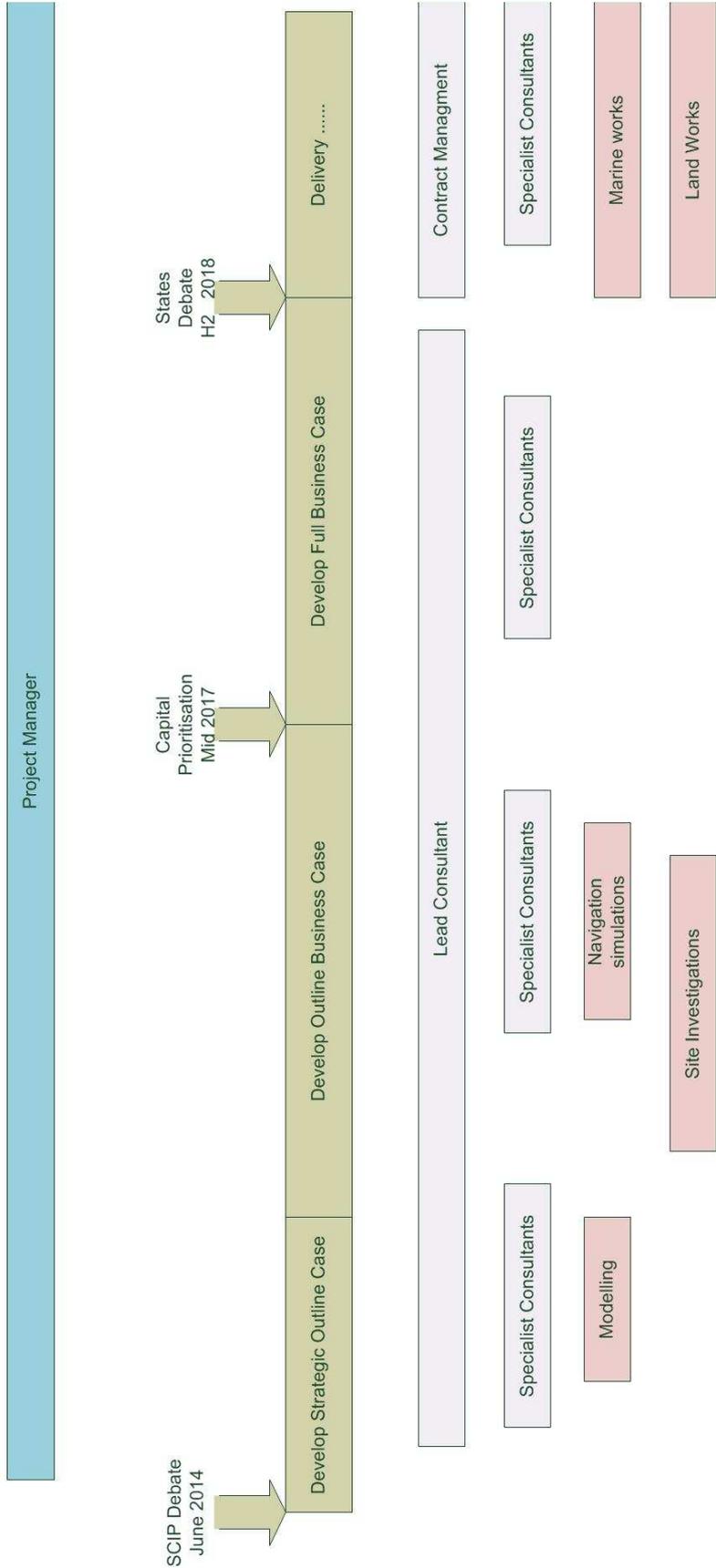
To successfully deliver this programme will require a significant input from the Public Services Department Head Office and Guernsey Harbours. Support from States Property Services and the Programme Management Office will also be important, but it is clear that even with accessing the available in-house resources, additional support will be needed both to manage the programme and to acquire the knowledge, skills and experience necessary to progress the programme.

Options for this include;

- Appointment of additional contract staff
- Appointment of a company to provide programme / project management services
- Appointment of companies to provide technical (lead consultant) and specialist services
- Directly contracting with specialists or through lead consultant
- Appointment of a company to provide contract administration services
- Combining programme / project management duties with the lead consultant appointment.

These will be resolved through a procurement workshop however the associated consultancy appointments are broadly anticipated as:

# Deep Water Berth - Liquid Hydrocarbons



## 7.2 Programme milestones

The main milestones for the programme are

June 2014	States approval
Q1 2015	Enter contracts for investigations
Q4 2015	Strategic Outline Case prepared – Gateway 1
Q1 2017	Outline Business Case prepared – Gateway 2
Q3 2017	Capital Prioritisation debate for 2018 – 2021
Q1 2018	Enter Contracts for Hydrocarbon Supply projects
End 2020	Projects complete, realize benefits.

## 7.3 Programme assurance

Gateway reviews will take place as required by the States Capital Investment Portfolio [SCIP]. As a programme this will have a Gate 0 review with Projects then following the Gateway 1, 2, 3 structure of external assurance reviews.

<u>Number</u>	<u>Name</u>	<u>Type of 'business' case</u>
Gate 0	Strategic Assessment	Strategic Outline Programme
Gate 1	Business Justification	Strategic Outline Case
Gate 2	Delivery Strategy	Outline Business Case
Gate 3	Investment Decision	Full Business Case

In addition the Programme and Project Boards will have explicit assurance responsibilities.

**Annex A**

**Programme risk register**

**Annex B**

**Build-up of the expenditure projection**

RISK REGISTER / ASSIGNMENT / IMPACT ANALYSIS / MANAGEMENT STRATEGY

Programme: Hydrocarbon Supply  
 Department: Public Services  
 Report Date: 04-Apr-14  
 Stage: Programme Business Case  
 Risk Owner: All

Risk Register					Risk Impact Analysis							Risk Management Strategy			
Risk Element		Risk Assignment			Risk Type (F/V)	Probability (H/M/L)	Proximity	Risk Impact	Cost Impact (H/M/L)	Maximum Cost (£)	Maximum Delay (Days)	Risk Response	Revised Cost (£)	Revised Delay (Days)	Status
No	Sub Title / Description	Current Owner (S/C)	Move to	Person Responsible for monitoring											
1	<b>Business Case</b>														
	a	Refineries will no longer load NAABSA ships for Guernsey for legislative reasons	S		F	L	2020	Oil imports in restricted quantities through St.Peter Port until an alternative can be arranged	H			Lobby government regarding impact of changes on small island communities. Proceed with this programme without undue delay.			
	b	Refineries will no longer load NAABSA ships for Guernsey for commercial (risk) reasons			F	M	2017	Oil imports in restricted quantities through St.Peter Port until an alternative can be arranged	H			Lobby refineries / oil companies regarding impact of changes on small island communities. Consider underwriting refineries' risk. Proceed with this programme without undue delay.			
	c	NAABSA ships reach end of life without replacement			F	L	2027	Oil imports in restricted quantities through St.Peter Port until an alternative can be arranged	H			Include owner as stakeholder, to ensure maintenance and planning for disposal of the vessels is compatible with programme timeline.			
	d	Cost uncertainty			V	H	2016	Could select non-optimal solution. Affect other projects in the SCIP.	M			Use experienced advisors to develop budget costs. Likely to be a broad range of costs at long list stage.			
	e	Early failure of the implemented solution			F	L	2022	Oil imports in restricted quantities through St.Peter Port until an alternative can be arranged	H			Use experienced advisors to develop robust solutions with appropriate levels of redundancy for critical elements.			
	f	Developing a solution that is not aligned to industry direction, growth and practices i.e. leading/bleeding edge			V	L	2018	Increased maintenance cost. Premature replacement.	M			Ensure brief for advisors includes preference for robust, industry standard solutions where possible.			
	g	Failure of one element of the supply chain (business failure, physical infrastructure failure or commercial decision to withdraw from the business.)			V	M	2018	This is a live risk, independent of any future changes to the supply chain	M			Develop detailed analysis of supply chain risks. Will be related to the balance between public / private ownership and operation of the whole supply chain.			
	h	Rapid changes in fuel types or regulations exceed the supply chain's ability or desire to change			V	L	2030	Unavailability of new fuel types on Island, possible increase in costs and loss of confidence in Island.	M			Use experienced advisors to anticipate possible changes and also to develop robust but flexible solutions.			
	i	Lack of clarity about which Department is accountable and empowered to deliver leads to solution not being ready in time			V	M	2014	Delay in implementation with potential for abortive work with associated costs.	M			Establish clear programme governance and corporate ownership. Identify all stakeholders and ensure they are included in the specification of the programme and development of the options to reduce the chances of delay in later stages.			
	<b>Developing the Long List of Options</b>														
2	<b>Site</b>														
	a	Environmental Conditions not known to a satisfactory level (wind, wave, currents)			V	M	2016	Non- optimum designs. New facilities may not have the anticipated availability.	M			Ensure all available data is identified and made accessible. Consider additional analysis of records or additional recording to improve quality of data.			
	b	Environmental Changes affect usability of options.			V	M	2016	Options may have short life before adaptation is needed which may then cost more necessary.	M			Use a conservative set of climate change predictions. Ensure that adaptation costs for each option is not disproportionate.			
	c	Bathymetry and topography is inaccurate or to an inadequate level of detail			V	M	2016	Option selection compromised with possibility of increased construction costs as contractor claims for changes.	M			Ensure all available data is identified and made accessible. Consider additional analysis of records or additional investigations to improve quality of data.			
	d	Ground Conditions not as expected leading to inaccurate budget costing of options			V	H	2016	Option selection compromised with possibility of increased construction costs as contractor claims for changes.	M			Ensure all available data is identified and made accessible. Consider additional investigations to improve quality of data.			

3	<b>Programme</b>																		
	a	Delays and additional costs from poor client side programme and project management.				V	M	2015	Delays increase costs and the probability that the existing NAABSA arrangements are not acceptable before the new facilities are available.	M			Ensure sufficient resources are made available for the programme. Consider utilising externally appointed Client Programme Manager and using PMO support office as well as resources in SPS. Also needs commitment from other Stakeholders and States Departments.						
	b	Gateway Reviews delay programme and projects				V	M	2016	Delays increase costs and the probability that the existing NAABSA arrangements are not acceptable before the new facilities are available.	L			Ensure the programme and projects within it are run in accordance with Corporate guidelines and good management practice. Ensure adequate notice is given to the review organization and allow for the process within programmes.						
	c	States Approval to let contracts				F	L	2017	Delays increase costs and the probability that the existing NAABSA arrangements are not acceptable before the new facilities are available.	M			Update States on the journey to preferred option. Regular presentations during the development. Keep public informed. Identify pressure groups.						
	d	Changes to scope of works by States during debate.				V	L	2017	Increased costs and possible delay whilst changes are incorporated into the programme / projects.	M			Update States on the journey to preferred option. Regular presentations during the development. Keep public informed. Identify pressure groups.						
	e	Planning Permission				F	H	2020	Delays increase costs and the probability that the existing NAABSA arrangements are not acceptable before the new facilities are available.	M			Involve planning as a stakeholder and contact early in the process. Incorporate into brief for advisors option appraisal.						
	f	Environmental Impact Assessment				F	H	2020	Delays increase costs and the probability that the existing NAABSA arrangements are not acceptable before the new facilities are available.	M			Start discussions early - look at what can be done before the preferred option is identified and what has to wait for the detailed design.						
4	<b>Contract</b>																		
	a	Poor performance of Consultants / Advisors				V	M	2014	Possible delay, selection of non-optimum solution and increased implementation costs.	M			Develop accurate brief. Select appropriate cost / quality ratio for tender evaluation. Include performance management / monitoring within appointment. Ensure sufficient client management resource.						
	b	Inappropriate contract type				V	M	2014	Could lead to difficulty in managing consultant and possibly an unwanted risk profile.	L			Procurement workshop for consultants to cover whole procurement process. Brief, contract type, risk appetite etc.						
	c	Obtaining competitive tenders				V	M	2014	Increased costs for consultant appointment	L			Ensure that appointment has a realistic brief and risk profile which will be attractive to the market.						

**Notes**  
The risk probability figure is assessed from experience and consideration of the specific circumstances of the project. It is placed in the column headed probability level. The categorisation into High, Medium or Low is a simplified representation of the probability.  
The maximum cost of a risk is assessed from consideration of the project and is placed in the Maximum cost column. The categorisation of Cost Impact into High, Medium or Low is a simplified representation of the cost.

Task	Value	Start	Finish	Profile	2014		2015			2016				2017	
					Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	
Programme Management	£300,000	Sep-14	Mar-17	even	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Long list options SOC	£600,000	Jan-15	Dec-15	S		75,000	225,000	225,000	75,000						
Site Investigations	£800,000	Oct-15	Sep-16	S				100,000	300,000	300,000	100,000				
Short list options OBC	£700,000	Jan-16	Mar-17	S						50,000	175,000	250,000	175,000	50,000	
Environmental Impact	£600,000	Jan-16	Mar-17	S						50,000	150,000	200,000	150,000	50,000	
<b>Total</b>					30,000	105,000	255,000	355,000	405,000	430,000	455,000	480,000	355,000	130,000	
<b>Running total</b>					30,000	135,000	390,000	745,000	1,150,000	1,580,000	2,035,000	2,515,000	2,870,000	3,000,000	