Programme Services to the Guernsey Hydrocarbon Supply Programme

Stakeholder Options Evaluation - 4 Sept 2017









Introduction



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Energy Context



Strategy and Operations

Energy market transformation Hydrocarbon Supply Programme

Strictly private and confidential **Draft**

September 2017







Agenda





We are in the middle of a fundamental change in the global energy system

| theguardian Portugal runs for four days straight on renewable energy alone | The Telegraph Business • Business UK's bet on offshore wind pays off as costs plunge | Environment Nearly 140 countries could be powered entirely by wind, solar and water by 2050 'Our findings suggest that the benefits are so great that we should accelerate the transition to wind, water, and solar, as fast as possible, by retiring fossil-fuel systems early wherever we can' In Johnston Environment Correspondent @montauXan 2 days app [19] comments | | |
|--|---|---|--|--|
| News U.S. Sport TV&Showbiz Australia Femail Health Science Mo Address Mow Woodt News Atts Headines France Dectares Moot read Wines Dectares Moot read Wines Dectares Dectares Moot read Wines Dectares Dectares Dectares Moot read Wines Dectares Decta | TIMES y breaks subsidy link with new d farms erman schemes without financial aid in groundbreaking deal | BBC Sign in News Sport Weather iPlayer TV F NEVVS Home UK World Business Politics Tech Science Health Education Enter UK England N. Ireland Scotland Alba Wales Cymru New diesel and petrol vehicles to be banned from 2040 in UK f Image: Communication of the state of the st | | |
| FINANCIAL TIMES Volvo shakes up car market in pursuit of electric dream Turning point for industry as Swedish group drops combustion engine only vehic | les British power gener ever coal-free day National Grid hails milestone as other allow UK to keep lights on with all coal | eguardian ration achieves first sources like gas, nuclear, wind and solar l-fired powerplants offline | | |



Underpinning the transition are four market drivers





From 2005, energy efficiency started to outweigh energy demand growth





The UK is emitting less carbon than at any time since 1894

UK CO2 emissions, 1850-2016 Million tonnes of CO2 Carbon emissions in 2016 1985 1990 1995 860 865 885 895 900 905 940 950 955 960 965 930 975 S Source: Carbon Brief



Coal and Oil are playing a smaller and smaller role in the energy system; gas as 'bridging fuel'

EU total primary energy demand by fuel, 2014-2040





We are at a tipping point – some renewables starting to compete head-on with traditional energy sources...





... Meaning that renewables are becoming mainstream





Rise of renewables and distributed generation means that grids are becoming more complex





Supply, demand and pricing is becoming more dynamic, supported by new technologies





These changes are making energy policy more complex





For example, the objectives of UK energy policy



To cut greenhouse gas emissions by 80% by 2050 (based on 1990 levels)



To maintain reliable energy supplies



To promote competitive markets in the UK and beyond, helping to raise the rate of sustainable economic growth and to improve productivity



To ensure that every home is adequately and affordably heated



Nearly all countries have energy policies that support renewable energy





Some questions for Guernsey

- 1. Where does Guernsey lie currently on the energy trilemma? Where would it like to be?
- 2. Would it like to accelerate the decarbonisation of the island? Why?
- 3. What are the pros and cons of electrification vs fossil fuels?
- 4. How might you encourage innovation or private investment?
- 5. Which policy areas might be most feasible? Or have most impact?

Thank you

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Workshop – Introduction to the Activities

| 1. | Options Development and Evaluation Process | 15mins |
|----------|---|--------|
| 2. | Activity 1 | 30mins |
| 3. | Break | 15mins |
| 4. | Activity 1 Discussion | 15mins |
| 5. | Activity 2 | 60mins |
| 6. | Break | 15mins |
| 7. | Activity 2 Discussion | 45mins |
| <u> </u> | | |



Options Development



Long List (68 options)

| Cat | Number | Supply Chain Types | Comments |
|-----|--------|---------------------------|--|
| 0 | 1 | Existing | No SoG intervention |
| 1 | 6 | Not Always Afloat | At St Sampson's |
| 2 | 10 | Always Afloat Fixed Berth | New terminal or modify St Sampson's |
| 3 | 14 | Always Afloat SPM/MBM | New terminal |
| 4 | 9 | Unitised (ISO) options | Import through St Peter Port |
| 5 | 12 | Pipelines | From other jurisdictions |
| 6 | 7 | Multi – use options | LoLo/RoRo/Cruise |
| 7 | 5 | Off Island Options | Alderney/Jersey |
| 8 | 4 | Floating Storage | Fixed berth or SPM |

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Evaluation Process

Programme Team Evaluation July to August 2017

Stakeholder Evaluation Workshop

4th Sept 2017

Final Assessment



Programme Team Evaluation process



Stakeholder Workshop – Evaluation Process

In this stakeholder workshop we will use a modified assessment process to gather information on stakeholder preferences in relation to the long list of options.

The workshop follows the Programme Team evaluation and thus can draw on work done there.

However, the process is designed to allow for different views to be expressed and for different outcomes.

Stakeholder Workshop – Evaluation Process

| Activity 1 | Consider Option Groups from Long List | |
|--------------------------|--|------|
| \rightarrow Discussion | Select Option Groups for Activity 2 | |
| Activity 2 | Assess Options from selected Option Groups | |
| \rightarrow Discussion | Agree which Options pass/fail CSFs and Risks | |
| → Compare costs | Compare costs for options which pass | |
| \rightarrow Ranking | Consider top options | |
| Close | Compare with Programme Team evaluation and discuss | |
| | | -, - |

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Stakeholder Workshop – Activity 1 [30 mins] Materials on each table

- Description of Supply Chain Groups
- Critical Success Factors
- Risk assessment (existing supply chain)



- Table of nine Supply Chain Groups with space for writing pros/cons [Note: printed on coloured paper]
- Table of nine Supply Chain Groups with space ranking 1-9 (with comments) [Note: printed on coloured paper]

- Step 1 for each supply chain group title, fill out blue Page with pros/cons bearing in mind CSFs – keep on table for reference
- Step 2 rank each supply chain title from 1 to 9, fill out yellow page, with optional comments
- Step 3 return yellow page to consolidator who will transfer to s/sheet for presentation and analysis
- Step 4 break

Stakeholder Workshop – Activity 1 Discussion of Results

| Option | | _ | Ranking | Total | D.4: | Mari | Overall | | |
|--------|---------|---------|---------|---------|---------|-------|---------|-------|------|
| Ref | Table 1 | Table 2 | Table 3 | Table 4 | Table 5 | Total | IVIIN | IVIAX | rank |
| 0 | 9 | 2 | 9 | 9 | 4 | 33 | 2 | 9 | 7 |
| 1 | 8 | 4 | 1 | 5 | 7 | 25 | 1 | 8 | 5 |
| 2 | 4 | 5 | 6 | 4 | 2 | 21 | 2 | 6 | 3 |
| 3 | 2 | 6 | 2 | 2 | 3 | 15 | 2 | 6 | 2 |
| 4 | 3 | 3 | 5 | 3 | 9 | 23 | 3 | 9 | 4 |
| 5 | 5 | 8 | 4 | 8 | 5 | 30 | 4 | 8 | 6 |
| 6 | 1 | 1 | 3 | 1 | 1 | 7 | 1 | 3 | 1 |
| 7 | 7 | 9 | 8 | 7 | 6 | 37 | 6 | 9 | 9 |
| 8 | 6 | 7 | 7 | 6 | 8 | 34 | 6 | 8 | 8 |

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Stakeholder Workshop – Activity 1 Agreement of Options taken to Activity 2

| Rank | Ref | Supply Chain |
|------|-----|--|
| 1 | 6 | Multi Use Options |
| 2 | 3 | Always Afloat Single Point Mooring/ Multi Buoy Mooring |
| 3 | 2 | Always Afloat Fixed Berth |
| 4 | 4 | Unitised (ISO) Options |
| 5 | 1 | Not Always Afloat |
| 6 | 5 | Pipelines |
| 7 | 0 | Existing |
| 8 | 8 | Floating Storage |
| 9 | 7 | Off Island Options |



Stakeholder Workshop – Evaluation Process

| | Activity 1 | Consider Option Groups from Long List | |
|---|--------------------------|--|--|
| | \rightarrow Discussion | Select Option Groups for Activity 2 | |
| | Activity 2 | Assess Options from selected Option Groups | |
| | \rightarrow Discussion | Agree which Options pass/fail CSFs and Risks | |
| | → Compare costs | Compare costs for options which pass | |
| | \rightarrow Ranking | Consider top options | |
| | Close | Compare with Programme Team evaluation and discuss | |
| 5 | | | |

Stakeholder Workshop – Activity 2 [60 mins] Materials on each table

- Full long list of options for each supply chase
 be considered option descriptions
- Full long list of options for each supply chain group to be considered with Programme Team assessment of Critical Success Factors and Very High Risks
- List of options which pass CSF (ex VFM) and risks [printed on coloured paper]

Facilitator

- Step 1 assess for each option whether the Critical Success Factor Red/Green assessment by Programme Team should be changed – and why
- Step 2 only for options which pass the Critical Success Factors, assess whether Red/Amber/Green Programme Team evaluation should be changed – and why
- Step 3 complete green page with options which pass and return to consolidator
- Step 4 break

| | | Califical Surveys Forders Fundanting | | | | Foliada alti sulla Ma | | | | |
|-----|---|---|--|-----------------|--|--|---|---|--|---|
| Ref | Supply Chain Scheme Descriptic | Security | Initial Success Factors Evalu | Value for Money | Safety | vesselavailable | Vessel collision/damage on approach, entry/exit or during discharge | Evanuation of very righ Risks Damage, fire or explosion at storage facilities | Inadequate fuel stocks available | Part of the supply chain become commercially unviable/ho longer provided by the private sector |
| | Always Afloat Fixed Berth Options | | | | | | | | | |
| 24 | New always afloat fixed bert using existing storage facilitie | | | | Storage of clean products in existing storage facilities does not must the minimizing safety risk CST. | | | | | |
| 29 | New always afloat fixed bert! (medium sized vessels) using new storage facilities for Clea & LPG & existing HPO storage at power station. | New flaw for theilty will reduce access restrictions hence reduce risk of delay in delivery. New conge facilities shad to meet foreact demand and aligned with transport method / parsel size. Opens maket to bravesed number of global flaw by removing St Sampson Max requirement. | New facility with reduced access constraints will increase the relability of the snapport and upload deterests of the uppy chain. New storage facilities doed to newt forecast demand and aligned with transport method / parcel doe. Opens matket to increased to. Opens market to increased parts of global direct by remoding & Sampson Max regularement. | | New storage for clean products. New storage to be located to need CSP in relation to homes and businesses with DR2. | longer relient on St. Sempson's u vessels with the St. Sempson's dyn, nanouverselling, and ASA constraints. • risk of no vessels being stables as operative to a larger portion of the tanker fleet. | New port designed to current realigation candided for design vanish therefore Likelihood reduced to Long(1). Impact memoins the same as now a single import facility. | Removed some explicition risks from the Sampsonth, impact reduced to displaystant (4) as new dronge location leave though to lead to multiple ious of the and more easily contained to smaller rejustational and financial impact. | Assume introduction of control mechanisms for minimum levels depending on thequency of supply. | Much wider range of wessels can be used for delivery so monopoly much less likely. New storage could be optimized to provide a lower cost have for fuel importers (e.g. common fuel fam). |
| × | New always afloat fixed bert (large vessels) using new storage facilities for Clean & LPG & existing HFO storage a power station. | New flaed berth facility will reduce access restrictions hence reduce risk of delay in delivery. New storage facilities sized to meet forward demand and aligned with toreaport method / paret 4 law. Opens market to increased number of global fleet by removing it Sampson Max requirement. | New facility with reduced access constraints will increase the reliability of the transport and upload dements of the supply chain. New storage facilities street to meet forecast demand and aligned with transport method / parcel size. Genes market to journed number of global fleet by removing its Sampson Max requirement. | | New storage for clean products. New storage to be located to make CGF in relation to homes and bucknesses with GRZ. | longer relient on St Sampson's wessels with the St Sampson's gth, manowenability, and ASA constraints. w risk of no vessels being stable as opened to a larger portion of the tanker fleet. | New port designed to carrient surgistion tandack for design vessels therefore reduced Likelihood induced to Low(1). Impact remains the same as now a disgle import facility. | Benoved some explosion risks from is Sampsonit. Impact reduced to significant (4) as new storage location less Barly to least for multiple box of the and more easily contained on smaller rejusticional and financial impact. | Assume Introduction of control mechanisms for minimum levels depending on Empanency of supply. | Much wider range of wookis can be and for delivery so monopoly much less likely. New storage could be optimised to provide a lower cost base for fuel importers (e.g. common fuel firm). Langer westell potentially decrease unit height cost may make it more commencially vable. Petential increased storage and working capital costs. |
| 20 | Dredge existing berths in St Sampson's Harbour to provid always afloat berths when vessels are alongside. | | | | Storage of clean products in existing storage facilities does not meet the minimizing safety risk CSF. | | | | | |
| 26 | Dredge existing berths in St Sampson's Harbour to provid always aflost berths when vessels are alongside. New Clean storage. | Product livels appear to have been maintained does 10 days demand over reacting years however, data to support this is incompletes. New storage facilities shad to meet foreact demand and aligned with transport method / parcel das. Open: market / parcel das. Open: market / increased number of global facet by removing NARES. requirement. | New charage facilities sized to meet forward downood and aligned with thoreport method / parcel size. Opens market to increased number of global fleet by removing NAABSA requirement. | | New storage for clean product. New storage to be located to new CSF insidion to homes and businesses with DP2. | longer relact on NAABSA straints. Jest to more, but not many more sels. | No change as the same fails apply on entrylect from the & Sampson's Nationar. | Removed some explication risks from 16 Sampsonth, impact reduced to significant (4) as new storage location less likely to lead to multiple focus of life and more easily contained to smaller registrational and financial impact. | Assume introduction of control machanisms for minimum levels depending on thequency of supply. | Wilder range of vessels can be used for delivery so monopoly much less flash. New storage could be optimized to provide a lower cost base for fuel importers (e.g. common fuel fam). |

ss. ...

| | Catastrophic | High | Very High | Very High | Very High | Very High |
|-----|--------------|---------|-----------|------------|--------------------|-----------|
| | (5) | | | | | |
| CI | Significant | Medium | High | Very High | Very High | Very High |
|)a(| (4) | | | | | |
| | Moderate | Medium | Medium | High | High | High |
| | (3) | | | | | |
| | Minor | Low | Medium | Medium | Medium | Medium |
| | (2) | | | | | |
| | Limited | Low | Low | Low | Low | Low |
| | (1) | | | | | |
| | | Low (1) | Medium | Medium (3) | Medium High (4) | High (5) |
| | | | | | · ··ˈˈˈəː (᠇) | |

| Guernsey | nyc | rocarbon | Shibbuk | Programme |
|-----------|------|----------|---------|-------------|
| Stakehold | er \ | Vorkshop | 4th Sep | tember 2017 |

| mps1 | Historial June of revenue, Construer Competition during the period of the modern the away part of element of the supply chain) | | | | |
|--|--|--|---|--|--|
| 5 Catantrophic | Greater than (Smillion | Sutained national adverse media attention | Fuel rationing for more than 1 week | Multiple fatalities from a single occurrence | Breakdown in relationshi with international Regular |
| 4 mijer | £1milion to £5milion | One off national adverse media attention | Puel rationing for up to 1 week | A fatality or serious disability or life threatening health effect | Breach of regulation or legislation with severe cost fine |
| 3 Maderate | £100,000 to £1milion | Suttained adverse local media and / or social media attention | <3 days strategic volumes remaining in the task and fuel rationing being considered | A lost time injury (>5 days) or serious injury (reportable) or irreversible health effect | Breach of legislation or co resulting in fine or rebuke Court or Regulator |
| 2 stive | £3,000 to £100,000 | One off adverse local media and / or social media attention | 5 to 30 days strategic volumes remaining in the tank | A minor injury (medical treatment -3 days let time) or reversible health effect or restriction to Work Activity | Breach of legislation or co resulting in a compensatio award |
| 1 inignificant | Less than £5,000 | isternal Matter | 30 to 20 days strategic volumec remaining in the tank | A slight injury (first aid) or slight health effect | Breach of legislation or co resulting in no compensati or loss |
| 0 No impact | No financial loss | No reputational damage | >20 days strategic volumes remaining in the tank | No injury or health effect | No regulatory or code bre |
| idufeccerbase Cumbly Decommons Reference Docum | ent 684732-043-500-00- | 20-0003 Rev 1 | | | |

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Likelihood/Plausibility

It is extremely unlikely to the event will occur as etween a 0.005% and letween a 1 20,000 and 1 1 there is nearly no experience of it in the 0.05% chance in 2,000 chance ector. The event is unlikely to ween a 0.05% and 0 5% letween a 1 in 2,000 and 1 2 fedium-low occur as experience of it is in 200 chance very limited in the sector. It is likely that the event will occur as similar events Between a 0.5% and 5% Between a 1 in 200 and 1 in 3 Medium have been reported in the chance 20 chance sector. It is very likely that the event will occur in the tween a 5% and 50% etween a 1 in 20 and a 1 4 Medium-high supply chain as most of the in 2 chance ector has already suffered such events. The event will happen in 5 the supply chain in the ore than a 50% chance More than a 1 in 2 chance lose future.

Hydrocarbons Supply Programme Reference Document: 684723-CH2-SOC-00-RP-0003 Rev 1

Guernsey Hydrocarbon Supply Programme Stakeholder Workshop 4th September 2017

- Step 1 assess for each option whether the Critical Success Factor Red/Green assessment by Programme Team should be changed – and why
- Step 2 only for options which pass the Critical Success Factors, assess whether Red/Amber/Green Programme Team evaluation should be changed – and why
- Step 3 complete green page with options which pass and return to consolidator
- Step 4 break

Stakeholder Workshop – Activity 2 Agree Pass/Fail

See sheet



| Ref | Table 1 | Table 2 | Table 3 | Table 4 | Table 5 | Output |
|-----|---------|---------|---------|---------|---------|--------|
| 2A | Fail | Fail | Fail | Fail | Fail | Fail |
| 2B | Pass | Pass | Pass | Pass | Pass | Pass |
| 2C | Pass | Pass | Pass | Pass | Pass | Pass |
| 2D | Fail | Fail | Fail | Fail | Fail | Fail |
| 2E | Fail | Pass | Fail | Fail | Fail | Fail |
| 2F | Fail | Fail | Fail | Fail | Fail | Fail |
| 2G | Fail | Pass | Fail | Fail | Fail | Fail |
| 2H | Fail | Fail | Fail | Fail | Fail | Fail |
| 21 | Pass | Pass | Pass | Fail | Fail | Pass |
| 2J | Pass | Pass | Pass | Pass | Pass | Pass |
| 3A | Fail | Fail | Fail | Fail | Fail | Fail |
| 3B | Pass | Pass | Pass | Pass | Pass | Pass |
| 3C | Fail | Fail | Fail | Fail | Fail | Fail |
| 3D | Pass | Pass | Fail | Pass | Pass | Pass |
| 3E | Pass | Pass | Pass | Pass | Pass | Pass |
| 3F | Pass | Pass | Fail | Pass | Pass | Pass |
| 3G | Fail | Pass | Fail | Fail | Fail | Fail |
| 3H | Fail | Fail | Fail | Fail | Fail | Fail |
| 31 | Pass | Pass | Pass | Fail | Pass | Pass |
| 3J | Fail | Fail | Fail | Fail | Fail | Fail |
| ЗК | Pass | Pass | Pass | Pass | Pass | Pass |
| 3L | Pass | Pass | Pass | Pass | Pass | Pass |
| 3M | Pass | Pass | Pass | Pass | Pass | Pass |
| 3N | Fail | Pass | Fail | Fail | Fail | Fail |
| 6A | Fail | Fail | Fail | Fail | Fail | Fail |
| 6B | Pass | Pass | Pass | Pass | Pass | Pass |
| 6C | Pass | Pass | Pass | Pass | Pass | Pass |
| 6D | Pass | Pass | Pass | Pass | Pass | Pass |
| 6E | Fail | Fail | Fail | Fail | Fail | Fail |
| 6F | Pass | Pass | Pass | Pass | Pass | Pass |
| 6G | Pass | Pass | Pass | Pass | Pass | Pass |

Table I-10 Assessment by table of whether options meet CSF and address very high risks

Basis for Cost Estimates

Only these elements in the supply chain:

- Transportation
- Upload
- Storage

Excluded (common to all options)

- ex-refinery fuel cost
- distribution costs
- retail margin
- fuel duty (where relevant)

All costs are presented at 2017 prices and no allowance is made for inflation.

Basis for Cost Estimates - Pence per Litre

Whole life cost over 30 years = CAPEX over 30 yrs + OPEX over 30 yrs

Cost per litre = Whole Life Cost of Option over 30 years Sum over 30 years* (Clean Product volume + LPG volume + HFO volume)

*Based on Demand Study average base case 2016-2050

Each option includes a solution for each fuel type

Stakeholder Workshop – Activity 2

| Rank | Ref | PPL | Supply Chain | | | |
|------|-----|---------------|---|--|--|--|
| 0 | 0 | 5 | Continue existing supply chain. Industry to resolve and States of Guernsey to react. | | | |
| 1 | 3K | 8 | vIBM for HFO & Clean products, ISOs for LPG. New storage facilities for Clean & LPG products. Existing HFO storage. | | | |
| 2 | 3L | 9 | 1BM for HFO & Clean (Large ships) products, ISOs for LPG. New storage facilities for Clean & LPG products. Existing IFO storage. | | | |
| 3 | 3D | 10 | PM for HFO & Clean products, ISOs for LPG. New storage facilities for Clean & LPG products. Existing HFO storage. | | | |
| 4 | 3M | 10 | MBM for clean products only, ISOs for LPG & HFO. New storage facilities for clean and LPG products. Existing HFO storage. | | | |
| 5 | 31 | 11 | MBM for all products, new storage facilities for all products except for HFO. | | | |
| 6 | 3E | 11 | SPM for HFO & Clean (Large ships) products, ISOs for LPG. New storage facilities for Clean & LPG products. Existing HFO storage. | | | |
| 7 | 3F | 11 | SPM for clean products only, ISOs for LPG & HFO. New storage facilities for clean and LPG products. Existing HFO storage. | | | |
| 8 | 2B | 12 | New always afloat fixed berth (medium sized vessels) using new storage facilities for Clean & LPG & existing HFO storage at power station. | | | |
| 9 | 3B | 13 | SPM for all products, new storage facilities for all products except for HFO. | | | |
| 10 | 6F | 13 | Same as 2B except expanded to allow other vessels (bulk products: aggregates, cement, scrap). | | | |
| 11 | 2C | 14 | New always afloat fixed berth (large vessels) using new storage facilities for Clean & LPG & existing HFO storage at power station. | | | |
| 12 | 6G | 19 | Same as 2C except expanded to allow other vessels (Multi-user port for scheduled RORO and LOLO services). | | | |
| 13 | 6B | 20 | Same as 2B except expanded to allow other vessels (Multi-user port for scheduled RORO and LOLO services). | | | |
| 14 | 6C | 29 | Same as 2C except expanded to allow other vessels (Multi-user port for scheduled RORO and LOLO services). | | | |
| 15 | 6D | 45 | Same as 2C except expanded to allow for cruise vessels. | | | |
| 16 | 2J | Not Costed | New always afloat fixed berth (medium sized vessels). LNG replaces HFO and LPG. New storage facilities for Clean & LNG. | | | |

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Programme Team Evaluation

| Orig | Pass CSF | Pass RA | Pass New Red | Options which pass CSF, Original Red risks and New Red risks | Supply Chain Types |
|------|-------------|------------|--------------------|--|------------------------------|
| 1 | 0 | 0 | 0 | | Existing |
| 6 | 3 | 0 | 0 | | Not Always Afloat |
| 10 | 6 | 4 | 3 | 2B, 2C, 2I | Always Afloat Fixed Berth |
| 14 | 10 | 8 | 8 | 3B, 3D, 3E, 3F, 3I, 3K, 3L, 3M | Always Afloat SPM/ MBM |
| 9 | 8 | 2 | 1 | 4B | Unitised (ISO) options |
| 12 | 6 | 0 | 0 | | Pipelines |
| 7 | 5 | 5 | 5 | 6B, 6C, 6D, 6F, 6G | Multi – use options |
| 5 | 3 | 1 | 0 | | Off Island Options |
| 4 | 4 | 3 | 3 | 8A, 8C, 8D | Floating Storage |
| 68 | 45 | 23 | 20 | | |
| | | | | | |

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Programme Team Evaluation

| | Supply Chain | 2016-50 av (base) | | | | | |
|------|-----------------|-------------------|-----------------------|---------------|---------------|---------------|-----------------------|
| Rank | | ppl | Range ppl ∆ from 0 | TOTAL CAPEX | TOTAL OPEX | TOTAL MAINT | Supply Chain Summary |
| 0 | 0 | 5 | N/A | £ - | £ 131,000,000 | £ 29,000,000 | Existing (Ref case) |
| 1 | ЗК | 8 | <3 | £ 77,000,000 | £ 128,000,000 | £ 39,000,000 | MBM +ISO (LPG) |
| 2 | 4B | 9 | <4 | £ 11,000,000 | £ 244,000,000 | £ 9,000,000 | ISO |
| 3 | 3L | 9 | <5 | £ 102,000,000 | £ 129,000,000 | £ 49,000,000 | MBM lge +ISO (LPG) |
| 4 | 3D | 10 | <5 | £ 108,000,000 | £ 138,000,000 | £ 52,000,000 | SPM +ISO(LPG) |
| 5 | 3M | 10 | <5 | £ 88,000,000 | £ 170,000,000 | £ 41,000,000 | MBM +ISO (LPG +HFO) |
| 6 | 31 | 11 | 5-10 | £ 134,000,000 | £ 119,000,000 | £ 64,000,000 | MBM |
| 7 | 3E | 11 | 5-10 | £ 133,000,000 | £ 138,000,000 | £ 61,000,000 | SPM lge +ISO(LPG) |
| 8 | 3F | 11 | 5-10 | £ 114,000,000 | £ 179,000,000 | £ 51,000,000 | SPM + ISO (LPG & HFO) |
| 9 | 2B | 12 | 5-10 | £ 155,000,000 | £ 110,000,000 | £ 83,000,000 | Fixed Berth |
| 10 | 3B | 13 | 5-10 | £ 184,000,000 | £ 129,000,000 | £ 85,000,000 | SPM |
| 11 | 6F | 13 | 5-10 | £ 190,000,000 | £ 110,000,000 | £ 103,000,000 | 2B + bulk |
| 12 | 2C | 14 | 5-10 | £ 198,000,000 | £ 146,000,000 | £ 81,000,000 | Fixed Berth Ige |
| 13 | 8D | 14 | 5-10 | £ 206,000,000 | £ 112,000,000 | £ 103,000,000 | MBM float stor |
| 14 | 8C | 16 | 10-15 | £ 231,000,000 | £ 146,000,000 | £ 95,000,000 | SPM float stor |
| 15 | 8A | 16 | 10-15 | £ 246,000,000 | £ 117,000,000 | £ 121,000,000 | Fixed float stor |
| 16 | 6G | 19 | 10-15 | £ 292,000,000 | £ 112,000,000 | £ 152,000,000 | 2C + RoRo/LoLo |
| 17 | 6B | 20 | 10-15 | £ 311,000,000 | £ 110,000,000 | £ 170,000,000 | 2B + RoRo/LoLo |
| 18 | 6C | 29 | >15 | £ 491,000,000 | £ 112,000,000 | £ 263,000,000 | 2C lge + RoRo/LoLo |
| 19 | 6D | 45 | >15 | £ 797,000,000 | £ 112,000,000 | £ 434,000,000 | 2C + Cruise |
| 20 | 21 | 47 | >15 | £ 799,000,000 | £ 146,000,000 | £ 443,000,000 | Lock St Sampson |
| | | | | | | | |

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Programme Team Evaluation – Top 10

| Rank | Supply Chain | ppl | Range ppl Δ from 0 | Supply Chain |
|------|-----------------|-----|--------------------------|--|
| 0 | 0 | 5 | N/A | Continue existing supply chain. Industry to resolve and States of Guernsey to react. |
| 1 | ЗК | 8 | <3 | MBM for HFO & Clean products, ISOs for LPG. New storage facilities for Clean & LPG products. Existing HFO storage. |
| 2 | 4B | 9 | <4 | ISO tanks (not through St Sampson's Harbour) for all products. New storage facilities for Clean & LPG products. Existing storage for HFO. |
| 3 | 3L | 9 | <5 | MBM for HFO & Clean (Large ships) products, ISOs for LPG. New storage facilities for Clean & LPG products. Existing HFO storage. |
| 4 | 3D | 10 | <5 | SPM for HFO & Clean products, ISOs for LPG. New storage facilities for Clean & LPG products. Existing HFO storage. |
| 5 | 3M | 10 | <5 | MBM for clean products only, ISOs for LPG & HFO. New storage facilities for clean and LPG products. Existing HFO storage. |
| 6 | 31 | 11 | 5-10 | MBM for all products, new storage facilities for all products except for HFO. |
| 7 | 3E | 11 | 5-10 | SPM for HFO & Clean (Large ships) products, ISOs for LPG. New storage facilities for Clean & LPG products. Existing HFO storage. |
| 8 | 3F | 11 | 5-10 | SPM for clean products only, ISOs for LPG & HFO. New storage facilities for clean and LPG products. Existing HFO storage. |
| 9 | 2B | 12 | 5-10 | New always afloat fixed berth (medium sized vessels) using new storage facilities for Clean & LPG & existing HFO storage at power station. |
| 10 | 3B | 13 | 5-10 | SPM for all products, new storage facilities for all products except for HFO. |
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Compare Programme Team Evaluation and Workshop Evaluation

| Rank | Supply Chain | ppl | SH Workshop | Supply Chain |
|------|-----------------|-----|------------------|---|
| 0 | 0 | 5 | N/A | Continue existing supply chain. Industry to resolve and States of Guernsey to react. |
| 1 | 3K | 8 | Pass | MBM for HFO & Clean products, ISOs for LPG. New storage facilities for Clean & LPG products. Existing HFO storage. |
| 2 | 4B | 9 | Not evaluated | ISO tanks (not through St Sampson's Harbour) for all products. New storage facilities for Clean & LPG products. Existing storage for HFO. |
| 3 | 3L | 9 | Pass | MBM for HFO & Clean (Large ships) products, ISOs for LPG. New storage facilities for Clean & LPG products. Existing HFO storage. |
| 4 | 3D | 10 | Pass | SPM for HFO & Clean products, ISOs for LPG. New storage facilities for Clean & LPG products. Existing HFO storage. |
| 5 | 3M | 10 | Pass | MBM for clean products only, ISOs for LPG & HFO. New storage facilities for clean and LPG products. Existing HFO storage. |
| 6 | 31 | 11 | Pass | MBM for all products, new storage facilities for all products except for HFO. |
| 7 | 3E | 11 | Pass | SPM for HFO & Clean (Large ships) products, ISOs for LPG. New storage facilities for Clean & LPG products. Existing HFO storage. |
| 8 | 3F | 11 | Pass | SPM for clean products only, ISOs for LPG & HFO. New storage facilities for clean and LPG products. Existing HFO storage. |
| 9 | 2B | 12 | Pass | New always afloat fixed berth (medium sized vessels) using new storage facilities for Clean & LPG & existing HFO storage at power station. |
| 10 | 3B | 13 | Pass | SPM for all products, new storage facilities for all products except for HFO. |

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Next Steps

Review Workshop Feedback

Complete Assessment and Reporting Develop Policy Letter

