IRISH COAST GUARD

PART 1 - STUDY ON THE PROVISION FOR AN ETV

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Part 1 - Study on the Provision for an ETV

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26 October 2012
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EXECUTIVE SUMMARY

In August 2012 the Irish Coast Guard appointed Marine and Risk Consultants Ltd (Marico Marine) to carry out a study in order to examine the possibilities that may exist for the provision of an operational Emergency Towing Vessel or enhanced capacity for Ireland.

This report considers four options for the provision of an ETV for Ireland:

- **Option 1:** Some form of time charter from a competent contractor;
- **Option 2:** The procurement of an existing capable tug and operating the vessel either directly or through ship managers;
- **Option 3:** The procurement of a new tug operated either directly or through ship managers; and
- **Option 4:** The procurement of a new multi-role vessel, operated directly or through ship managers.

Part two of the report makes recommendations with regard to increasing the capacity of existing arrangements.

Generally speaking, the treatment of the risk presented by a disabled vessel on a lee-shore becomes increasingly expensive with the certainty and control required. The vulnerability of ETV funding arises from the infrequency of a potentially serious incident, and the absence of absolute certainty that the ETV will prevent or mitigate the consequences. Option 4 presents a solution that may provide an opportunity to realise a revenue stream, or an improved cost benefit by increasing efficiency across government. The report suggests that the research and development costs of a purpose built vessel could be reduced by using the expertise of other states that are already operating similar ships.

The scale of ETV funding is principally driven by the:

- Rated bollard pull of the vessel under consideration;
- Availability and response times to particular locations; and
- Extent to which the emergency role of the vessel can be offset by other standing employment.
A rated bollard pull of 200 tonnes provides a vessel capable of holding the largest vessels in severe conditions. However, experience elsewhere in Europe shows that the likeliest subject vessel is much smaller, and that a relatively modest bollard pull is capable of significantly reducing the drift rate of a large ship. The moving of liability for the operation away from the State, by outsourcing some or all of the operation of the ETV carries a premium in terms of contractual fees. These may not be offset by preventing an increase in the size of the directly employed workforce, and may be unnecessary if greater efficiency can be leveraged from other state agencies such as the Irish Naval Service or Irish Lights.

The report discusses the potential for easing the funding burden by co-operation with other states, or by some form of direct or indirect levy on the risk proposer (shipping, oil and gas, renewables, fishing or aquaculture). It concludes that the distances involved and the current position of the UK government make a UK/Ireland joint venture unlikely. It identifies an issue for further discussion within Ireland regarding the funding of government services by direct or indirect taxation, and queries the political appetite for imposing a levy on domestic maritime interests such as the fishing industry or aquaculture. The potential for a levy on shipping is limited, as the majority of the risk from commercial shipping is presented by passing traffic enjoying a right of innocent passage. The amount of shipping calling at Irish ports is relatively low and has fallen in recent years, and is somewhat skewed by the well-travelled ferry routes.
1 INTRODUCTION

In August 2012 the Irish Coast Guard appointed Marine and Risk Consultants Ltd (Marico Marine) to carry out a study in order to examine the possibilities that may exist for the provision of an operational Emergency Towing Vessel or enhanced capacity for Ireland.

The issue of emergency towing was first discussed by Lord Donaldson in the proceedings of his enquiry into the prevention of pollution by shipping which stated:

“We believe that the Government should set up a system to ensure that tugs with adequate salvage capacity are available at key points around UK shores. The tugs concerned would normally be provided commercially, but where the Royal Navy – or other public sector bodies – have tugs available it might make sense for them, or stronger replacements, to be used. Where adequate capacity cannot be provided in any other way, the Government should arrange for the funding of the difference between what is needed and what the private sector can provide.”

The Emergency Towing Vessel (ETV) principle was first articulated by Captain CPR Belton RN in 1994 and was the basis for his report to the United Kingdom Government which looked at the means by which the recommendations of Lord Donaldson could be implemented. This principle is simply that:

“Once a ship has broken down and is drifting towards the shore, tugs – in the generic sense – represent the first and only line of defence. Harbour and coastal tugs cannot always be relied upon to provide the level of assistance required and this premise is supported by the experience of other countries that have not placed their trust solely in such vessels”.

ETVs should be seen as an insurance policy against ship sourced pollution and their costs as a premium paid to provide a reasonable level of cover to the most vulnerable and/or the most hazard strewn stretches of coast. An
ETV will not always succeed in rescuing a stricken vessel. It may not be able to reach it in time; powered groundings can rarely if ever be prevented by an ETV. The weather will be significant factor and may preclude a tow from being connected. Any number of factors such as the capability of the stricken vessel crew may influence against success. Nevertheless, experience has demonstrated that if an ETV is available then the chances of success are greatly increased and pollution on the scale of the *Amoco Cadiz*, *Braer*, and *Exxon Valdez*, may be prevented or mitigated.

1.1 SCOPE OF SERVICES

The scope of services, as requested by the Irish Coast Guard, is to:

- Part 1: Examine the possibilities that may exist for the provision of an operational Emergency Towing Vessel (ETV) or enhanced capacity for Ireland; and
- Part 2: Review Ireland’s current capabilities for casualty intervention, traffic awareness and pollution prevention, preparedness and response.

It should be noted that this is Part 1 of a two-part report. The specification and requirements for Part 1 of this study is detailed below.

1.1.1 Part 1: Examine Possibilities for the Provision of an ETV for Ireland

This study examines the provision of an ETV, including the purchase or lease price, on-going running, oversight and maintenance costs, and potential funding arrangements by considering the following:

- *Arrangements in other European countries that are Atlantic, North Sea or Baltic Sea facing;*
- *The availability, positioning and capability of existing and proposed towing vessels or other vessels periodically or habitually in Irish waters to assist vessels in distress;*
- *The availability, in emergencies, of expert salvage crews for the existing towage vessels or as casualty advice;*
- *Assess the future requirement for, the value and impact of secondary duties, and the potential for shared roles. Assess the various additional roles for the ETV’s and the implications upon*
funding and costs, bearing in mind the need for prompt action when required under primary role;

- Engage with potential third parties identified to access their requirements and implications upon funding;
- Possible role for an ETV in light of increased oil/gas exploration and exploitation in the Irish exploration region;
- Any forthcoming or proposed International Maritime Organisation or European Commission requirements for ETV provision that will or may affect Ireland over the next 10 to 15 years;
- Assess the range of costs and the various conditions for providing ETV capacity and any other strategies identified to improve Coast Guard capacity; and
- Assess the possibility of co-operation with other States for mutual assistance or joint projects including a realistic appraisal of possible UK/Irish joint share in an ETV.

1.2 THE IRISH COAST GUARD

The Irish Coast Guard (IRCG) is a nationwide emergency organisation and is a division of the Department of Transport.

The purpose of the IRCG is to establish, promote and enforce safety and security standards, and by doing so, prevent as far as possible, the loss of life at sea, and on inland waters, mountains and caves, and to provide effective emergency response services and safeguard the quality of the marine environment.

The IRCG has responsibility for the Irish national system of marine emergency management in Ireland’s Exclusive Economic Zone (EEZ) and inland waterways including:

- Response to, and coordination of, maritime accidents which require Search & Rescue (SAR) and counter pollution & salvage operations; and
- Vessel traffic monitoring.

IRCG is also responsible for developing and co-ordinating the:

- Preparedness and response to spills of oil and other hazardous substances within the Irish Pollution Responsibility Zone;
• Provision of an effective response to marine casualty incidents; and
• Monitoring/intervention in marine salvage operations.

The marine emergency management functions that the IRCG carries out are as follows:

• To provide a national marine search and rescue response service, including a service to the off-shore islands;
• To provide a coastal, inland and, where appropriate, cliff search and rescue service;
• To provide a post-emergency body search and recovery service and relative liaison;
• To develop and co-ordinate an effective regime in relation to marine pollution cooperation, preparedness and response including the direction and coordination of on-shore and at sea recovery operations;
• Approve harbour/port, local authority and off-shore oil pollution and Hazardous Noxious Substances (HNS) response plans;
• To provide a response to marine casualty incidents and to monitor/intervene in marine salvage operations;
• Issuing directions or taking direct action under the Minister’s powers of intervention to prevent, mitigate or eliminate pollution;
• National Competent Authority for European Communities (minimum requirements for vessels carrying dangerous or polluting goods) regulations (HAZMAT);
• Acting as the national maritime security single point of contact; Internationally designated Marine Assistance Service (MAS) for Ireland and act as the national point of contact between vessels and coastal states;
• To provide a safety awareness and public information service in relation to the discharge of the functions set out above;
• To provide a maritime safety communications and national digital paging network;
• Provide a medical advisory service to shipping through Medico Cork at Cork university hospital;
• Agreeing and exercising the passenger vessel/ferry search and rescue plan required by SOLAS; and
• To provide a national automatic identification system and maritime awareness service of shipping and coastal traffic and deliver that picture to relevant parties.

The IRCG delivers its marine emergency response through a mixture of declared resources and craft/services of opportunity. Of the declared services, the Coast Guard directly manages and controls a number of these including:

• One Marine Rescue Coordination Centre (MRCC);
• Two Marine Rescue Sub Centres (MRSC);
• Six medium lift SAR helicopters at four bases, namely:
  o Dublin;
  o Waterford;
  o Shannon; and
  o Sligo.
• 55 volunteer rescue teams with 1000 volunteers: and
• A national communications, paging and shipping monitoring network.

The three co-ordination/communication centres are at MRCC Dublin, MRSC Malin Head and MRSC Valentia for marine emergency management (see Figure 1). Operational activities are divided into three divisions;

• Search and Rescue operations;
• Voluntary services and training; and
• Pollution and salvage operations.

In any one year the IRCG would be expected to carry out the following maritime safety tasks:

• Handle 2,000 marine emergencies;
• Assist 3,500 people and save about 180 lives;
• Task Coast Guard helicopters on approximately 500 missions, Coast Guard volunteer units will respond 900 times and RNLI and community lifeboats will be tasked by Coordination Centres about 850 times;
• Evacuate medical patients to hospital on 100 occasions;
• Assist other nations Coast Guards about 200 times;
- Make circa 6,000 maritime safety broadcasts to shipping, fishing and leisure craft users;

- Carry out a safety on the water campaign that targets primary schools and leisure craft users including at sea and beach patrols; and

- Respond to approximately 50 maritime pollution reports.

Figure 1: Irish Search and Rescue region

1.3 THE PROVISION OF AN ETV FOR IRELAND

Various serious accidents at sea where marine pollution has become a prominent issue have persuaded some governments to fund the provision of salvage vessels in a ‘stand-by role’ at sensitive locations. These vessels are generally operated by coastguard authorities or other government agencies as ETV’s. Many of the vessels employed are not only equipped for towage, salvage and fire-fighting but also for pollution control and recovery.
The primary function of the ETV is to intervene and prevent the escalation of a low consequence ship disablement event turning into one of catastrophic proportions. Therefore, the principal economic benefit secured through ETV deployment is negating or minimising the cost of post-incident clean-up and subsequent compensation costs.

The duty of an ETV is to attend the casualty as quickly as possible and render whatever assistance is necessary, the priority being to prevent the ship foundering and/or becoming a pollution hazard.

The Irish EEZ has a significant number of vessels of all types and sizes, very often carrying hazardous cargoes, passing through the area and therefore considered to be at risk to shipping incidents. The towage vessel employed must therefore be large enough, and have sufficient power, to assist casualties in a variety of different and in most cases difficult circumstances (see Section 4.4).
2 ARRANGEMENTS IN OTHER EUROPEAN COUNTRIES

European nations currently operating ETV’s is as detailed in Table 1 below:

Table 1: Number of ETVs employed in European Countries

<table>
<thead>
<tr>
<th></th>
<th>UK</th>
<th>France</th>
<th>Spain</th>
<th>Germany</th>
<th>Norway</th>
<th>Sweden</th>
<th>Finland</th>
<th>Poland</th>
<th>Netherl’ds</th>
<th>Iceland</th>
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<td></td>
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<td>5</td>
<td>14</td>
<td>8</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>1</td>
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2.1 ETV POSITIONS AUGUST 2012

A snap shot of the positions of European ETV’s on 13\textsuperscript{th} August 2012 is shown below in Figure 2.

![Figure 2: European ETV positions 13\textsuperscript{th} August 2012 (source: marinetraffic.com)]
2.2 **UNITED KINGDOM**

The first vessels of the UK's ETV fleet were introduced in 1994 following the recommendations of Lord Donaldson’s report ‘*Safer Ships, Cleaner Seas*’ published in May 1994 following the *mv Braer* oil spill off the coast of Shetland, Scotland. Klyne Tugs Ltd of Lowestoft (now JP Knight) took over the ETV contract in 1999, and in February 2001 signed an eight year contract to own and operate four ETV’s, which in 2009 was extended by two years, to run until September 2011. The ETVs were initially deployed in winter months and based at four locations; Dover Strait, Falmouth, Stornoway in the north west of Scotland, and Orkney in the east. The purpose built *Anglian Monarch*, *Anglian Princess* and *Anglian Sovereign* were allocated to Dover, Falmouth and Orkney respectively and *Anglian Prince* at Stornoway.

In January 2001 the MCA published the report “*A Review of Emergency Towing Vessel (ETV) Provision around the Coast of the United Kingdom*”. The report recommended that ETV cover in the existing geographical locations: Dover Strait, The Minches, South West Approaches and Fair Isle, should be provided on a “year-round” basis rather than being seasonal. It also recommended that the UK should enter into a dialogue for a sharing arrangement with the Irish for an ETV to be deployed in the Irish Sea area. This was dependant on a partnership arrangement with the Irish, establishing an ETV on their east coast and a suitable “Operating Agreement” being put in place with the MCA.

In 2010, the Government announced as part of the Department for Transport’s share of cuts in the Comprehensive Spending Review (CSR), that the ETV fleet would no longer be funded by the Maritime and Coastguard Agency (MCA) from September 2011, saving £32.5m over the Spending Review period. The Department stated “*State provision of ETVs does not* 

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represent a correct use of tax-payers money and that ship salvage should be a commercial matter between a ship's operator and the salvor”.

An overview of UK ETV activity between 2001 and 2010 as supplied by J P Knight is shown below in Table 2.

<table>
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<th>Table 2: UK ETV activity 2001-2010 (Source: JP Knight)</th>
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<tr>
<td></td>
</tr>
<tr>
<td>2001</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Total tasking’s by MCA</td>
</tr>
<tr>
<td>•</td>
</tr>
<tr>
<td>Tanker escorts (Minch)</td>
</tr>
<tr>
<td>•</td>
</tr>
<tr>
<td>Other tasking’s</td>
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<tr>
<td>•</td>
</tr>
<tr>
<td>Tows of disabled vessels</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>Salvages of stricken vessels</td>
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* = No available data

On 30 September 2011 it was announced that the two ETVs operating in the Minch and the Shetland Islands would receive a moratorium of three months with interim funding by the UK Government.

On 12th June 2012, The Secretary of State for Scotland confirmed that the UK Government will continue to fund an ETV until 2015. The UK Government accepted that there should be a tug based in the west coast of Scotland to cover the Minches and the Pentland Firth.

Tug MV Herakles (see Figure 3); was chartered by the UK Government to resume ETV duties in the waters of North Scotland. She will be stationed in Orkney and patrol from Barra to Shetland until 2015.
Figure 3: *mv Herakles* 170t bollard pull (formerly *mv Anglian Prince*)

The historical use of the UK MCA ETVs between 2005 -2010 is shown below in **Table 3** and **Figure 4**. On each occasion the ETV was used to tow, and/or engage in salvage and/or engage in an activity to remove the threat of significant pollution. The data makes reference to the ETV stations of Dover, Falmouth, Shetland and Stornoway with the respective guard areas being at the Minches, Fair Isle, south west approaches and Dover Strait. The Dover ETV figures include all interventions whilst the ETV was under UK and French Operations Control.

**Table 3: ETV Tows 2005 -2010 (Source: MCA)**

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<th>2005</th>
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<th>2008</th>
<th>2009</th>
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<tbody>
<tr>
<td>Dover</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>6</td>
<td>2</td>
<td>26</td>
</tr>
<tr>
<td>Falmouth</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Shetland</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Stornoway</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>8</strong></td>
<td><strong>10</strong></td>
<td><strong>10</strong></td>
<td><strong>11</strong></td>
<td><strong>9</strong></td>
<td><strong>8</strong></td>
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</table>
The Dover ETV has been deployed twice as often as the next busiest, and accounted for 46% of all interventions. The Dover Strait is one of the busiest shipping lanes in the world, with over 500 shipping movements plus 80 - 100 ferry crossings, per 24 hour period. It is monitored and to an extent organised, by the bi-national Channel Navigation Information Service and the presence of an IMO adopted Mandatory Reporting Scheme.

2.2.1 Recent UK ETV Interventions

- November 2010: *mv Red Duchess* a 1,300 tonne cargo vessel carrying coal lost power in a high winds near Rum. Initially the Mallaig lifeboat secured a line onboard until the *Anglian Prince* arrived who towed the *Red Duchess* into Stornoway harbour after a 20 hour tow in high winds;

- October 2010: *HMS Astute* "ran into difficulties" off the Isle of Skye while on trials after eye-witnesses reported the submarine had run aground a few miles from the Skye Bridge. Rather than use the submarine's own power to clear the stern from the obstruction *Anglian Prince* was called upon to assist (see Figure 5);
March 2010: Shetland Coastguard were notified of a mechanical breakdown on board the 3,269 tonnes general cargo ship Wilson Dover which was having steering problems about 45 miles north east of Cape Wrath. Once it became clear that the vessel required a tow Shetland Coastguard deployed Anglian Sovereign to take her under tow and took her to Kirkwall in Orkney; and

October 2008: The Russian general cargo vessel Mekahnik Semakov, carrying a cargo of timber, reported to Stornoway Coastguard that he was drifting 3nm from Isle of Skye and had difficulties with the engines. The Anglian Prince was sent to stand by the vessel whilst repairs were undertaken. As the problem was not resolved by the following morning the vessels owners was asked to ensure it had tug assistance as the Coastguard was concerned at its rate and direction of drift and the projected increase in wind rate. As no tugs were in the immediate vicinity it was decided that the Anglian Prince should undertake the tow and bring the Mekahnik Semakov to a safe anchorage at Broad Bay, Isle of Lewis.

2.3 FRANCE

Following the Amoco Cadiz incident in 1978 France was one of the first countries to acquire Government-funded ETVs, which are stationed along the Brittany and Normandy coastlines. The existing jointly-managed and funding arrangements for this provision commenced on 1 April 2000. As a direct result of the Anglian Monarch being withdrawn from the Dover Strait, the Abeille Languedoc was redeployed from La Rochelle to Dunkirk.
For assistance and salvage, five ETVs are chartered by the French Government:

- **Abeille Bourbon**: based in Brest, 200t bp;
- **Abeille Liberte**: based in Cherbourg 200t bp;
- **Abeille Flandre**: based in Toulon 160t bp;
- **Abeille Languedoc**: based in Dunkirk, 160t bp; and
- **Jason**: based in Toulon, 124t bp.

### 2.3.1 Recent French ETV Interventions

French ETV interventions undertaken in recent years are précised below:

- On 16th December 2011 **mv TK Bremen**, a 109m, 3,889 gross tonnes cargo vessel ran into difficulties in Brittany, France, during a severe storm (see **Figure 6**). Abeille Bourbon was sent to assist in the situation, however the vessel had already grounded and the area was too shallow for the ETV to make a tow-line fast. The **mv TK Bremen** was carrying more than 220 tons of fuel oil - which immediately began leaking. Inspections were made, and the damage was deemed too severe to repair, so salvage and scrapping operations began with Smit Salvage contracted, under a Lloyds Open Form (LOF) 2011 contract, for salvage services with Les Abeilles being engaged as subcontractor. At a cost of nearly €10m 40 men took two weeks to dismantle the vessel, and clean up the beach;

![Figure 6: mv TK Bremen ashore near Erderven, France 16th December 2011](image)
• On 22 July 2011 *Union Neptune*, on passage to Bordeaux developed a heavy list in the Bay of Biscay. The vessel with a cargo of 2,000 tonnes of iron oxide was assisted by tug *Abeille Languedoc*; but she partially sank whilst in tow to La Rochelle with her bow section remaining above water. On 12 August, the decision was taken that, in view of the danger to shipping, the wreck should be completely sunk. However, the ship eventually sank some 11.5nm south west of Oleron Island. There were no casualties, all the crew having been taken off safely by the *Abeille Languedoc*;

• On 8 October 2010 the *YM Uranus* a 120m tanker was involved in a collision with the Panamanian bulk carrier *Hanjin Rizhao* 50nm south west of Ushant off the Brittany coast. All 13 crew took to the lifeboats and were rescued by a French helicopter, and the vessel was safely towed by *Abeille Bourbon* to Brest; and

![Image of ship assistance](image_url)

*Figure 7: Abeille Bourbon assisting MSC Napoli*

• On January 18 2007 during severe gale force winds *MSC Napoli* 50nm south of Lizard Point while on route from Belgium to Portugal suffered cracks to the ship’s side and a flooded engine room. On January 19 the ship was taken under tow by *Abeille Bourbon* and later joined by *Abeille Liberté* (see Figure 7). With strong winds forecast and *MSC Napoli’s* deteriorating condition doubts were raised as to its ability to withstand the rigors of the journey to Portland and the decision was taken by the Secretary of State’s Representative who was leading the MCA’s salvage response team, to beach the ship in Lyme Bay. Of the 41,773
tonnes of cargo on board, 1,684 tonnes were classified as dangerous by the IMO. Of the 2,318 containers onboard 114 were lost overboard. In total 320 tonnes of petroleum was discharged into the environment affecting some sea birds. The vessel was broken up in situ and the salvage was completed in July 2009.

2.4 GERMANY

The German concept of emergency towing, which was brought into effect in 2002, prescribes a maximum response time of two hours for any incident in German coastal waters. This requires three ETVs in the North Sea and five in the Baltic Sea, despite a considerably smaller area to cover. Equipment and performance of the vessels have been adapted to the size of the vessels in the respective areas of operation and include the ability to operate in shallow waters. Moreover it is mandatory to have one vessel with a bp of 200t and 100t each in the North Sea and Baltic respectively. Both ship types are also required to be able to operate under hazardous conditions such as explosive areas and gas leaks.

Four out of the eight German ETVs are multi-purpose vessels owned by the Federal Water and Shipping Administration while another four have been chartered from tug companies. In 2001 Germany and the Netherlands signed an agreement on the principle of mutual assistance on request in cases of deficiencies with emergency towing capacity of the contractors appointed to provide the service.

The current German ETV fleet consists of:

- North Sea:
  - Nordic: operating off the east Frisian Islands while based in Cuxhaven, 201t bp (see Figure 8);
  - Mellum: operating off Heligoland, 100t bp; and
  - Neuerwerk: operating off Süderoogsand 113t bp.

- Baltic Sea:
  - Bülk: operating off Kiel Fjord, 40t bp
  - Scharhörn: operating between Kiel and Fehmarn, 40t bp;
  - Baltic: operating from Warnemunde, 127t of bp;
o *Arkona*: operating from Stralsund, 40t bp; and
  o *Fairplay 25*: operating from Sassnitz Rugen, 65t bp.

For example, *Nordic* (see Figure 8) is operated by *Bugsier Reederei und Bergungs* of Hamburg for a ten year period (from 2011), under contract to the German Government in a deal valued at close to €114 million.

![Image of German ETV 'Nordic'](image)

**Figure 8: German ETV ‘Nordic’**

### 2.4.1 Recent German ETV Intervention

A précis of recent German ETV interventions is given below:

- On 27 February 2012, while on passage from Terneuzen in the Netherlands to the Danish port of Randers, a general cargo coaster, *Selene Prahm*, ran aground. Tugs *Scharhörn* and *Holtenau* were tasked to assist and towed the *Selene Prahm* to Scheer Port in Kiel; and

- On 9 October 2010 *mv Lisco Gloria* a passenger ferry, en route to Klaipeda suffered an explosive fire on the car deck that later engulfed the entire ship. The German Coast Guard dispatched the tug *Nordic* to the scene and initiated the rescue of all passengers and the crew. The ship later drifted into Danish waters and the Danish Coast Guard dispatched an oil containment vessel to the site because *mv Lisco Gloria* had some 200 tons of fuel oil on board. She was towed to Odense, and declared a constructive total loss.
2.5 SPAIN

The Sociedad de Salvamento y Seguridad Marítima has a total of 14 multi-purpose vessels for search and rescue and pollution prevention duties.

They all have a self-operating crane to load and unload anti-pollution equipment, and they have their own respective booms and skimmers ready to load. Four units are equipped with sweeping arms.

A list of the ETV’s is provided below. The geographical distribution of these vessels can vary depending on season and needs.

- Don Inda Class - 2 sister ETV’s 228t bp;
- Luz de Mar Class - 2 sister ETV’s 128t bp;
- María de Maeztu Class - 7 sister ETV’s 60t bp;
- Alonso de Chaves - 105t bp;
- Punta Salinas - 97t bp; and
- Punta Mayor - 81t bp

2.6 NORWAY

The Norwegian Coast Guard (Kystvakten) owns three Barentshav class Offshore Patrol Vessel (OPV) multi-purpose vessels, powered by liquefied natural gas each with a bp of 110t:

- Barentshav;
- Bergen; and
- Sortland.

The Norwegian Coast Guard also charters the following:

- ETV/ Anchor Handling Supply Tug:
  - NoCGV Harstad (see Figure 9); and
  - Beta, 118t bp;
  - Normand Jarl, 150t bp; and
  - North Crusader, 144t bp.

NoCGV Harstad is owned by Remøy Shipping, who operate it on long term charter to the Norwegian Coast Guard and undertakes a variety of coastguard and EEZ management roles. These include offshore standby
and rescue, fire-fighting, salvage, and general law enforcement operations and fishery control as well as pollution prevention. There is concern over the rapidly increasing oil tanker traffic from Russian ports along the coastline of northern Norway, with the risk of a disabled vessel grounding and causing an oil spill, and therefore pollution prevention is an important role for Harstad and she is therefore fitted for emergency towing of tankers up to about 200,000 tonnes dwt and spill clean-up. The vessel will be manned, as are the other Norwegian coastguard vessels, by a combined military and civilian crew.

Figure 9: Norwegian Coast Guard ETV NoCGV Harstad

2.6.1 Recent Norwegian ETV Intervention

A précis of a recent ETV intervention is given below:

- On 3rd August 2011 the Norwegian flagged general cargo coaster Kongsvaag grounded on the island of Flosundholmane near Austre Bokn. There were no reported injuries to crew and no pollution and the vessel was re-floated on the next high water.
2.7 SWEDEN

The Swedish Coast Guard operates three multifunctional patrol ETV’s of the same type with bp of 110t:

- **Poseidon**, based in Gothenburg;
- **Triton**, based in Gotland; and
- **Amfitrite**, based in Karlskrona.

The primary role of the ships is to patrol the territorial waters of Sweden, engaged in general Coast Guard duties such as fishery, environmental and marine traffic control as well as to conduct search and rescue operations, including diving and the operation of ROVs.

2.7.1 Recent Swedish ETV Intervention

A precis of recent ETV interventions is given below:

- On 27 November 2011, the chemical tanker, **Ternholm** suffered engine failure of Bro Fjord. Tugs were immediately tasked to assist however the vessel anchored and the engine was restarted and the ship continued on passage; and
- On 17 August 2011 **mv Alva**, ran aground in the OreSound while on passage from Szczecin in Poland to Gothenburg in Sweden with a cargo of sodium silicate. The **Amfitrite** attended and eventually pulled the vessel clear. **mv Alva** was the third vessel to go ground in the Ore Sound during 2011.

2.8 NETHERLANDS

Since June 2010 the Netherlands Coastguard has chartered **Ievoli Black**; bp 120t, an anchor-handling tug manned by a Svitzer Wijsmuller crew.

The tug is normally based 12nm off the Den Helder coastline, however when the wind is above Force 5 she moors in Den Helder on 15 minutes’ notice. The **Ievoli Black** is also tasked to assist in SAR; VTS; fishery patrols; exercises; as well as representing the Netherlands Coastguard.

2.8.1 Recent Dutch ETV Interventions

Recent interventions by the Dutch ETV are précised below:
On 3\textsuperscript{rd} April 2012 the \textit{Ievoli Black} was dispatched to \textit{mv Ara Felixstowe} a 104m vessel loaded with steel rolls which had reported an engine failure off Terschelling. Harbour tugs arrived on the scene before \textit{Ievoli Black}, who remained on station throughout. The harbour tug ‘\textit{Hunter}’ towed the vessel to the Dutch port of Harlingen;

On 20\textsuperscript{th} January 2012 \textit{Aztec Maiden}’ encountered main engine problems shortly after departing from Ijmuiden. The 155m vessel was light ship and drifted ashore before the ETV arrived (see Figure 10). With tug \textit{Svitzer Marken} the \textit{Ievoli Black} made three attempts to get the vessel under tow with the tow-line parting on each occasion before eventually pulling her off the sandbank and towing her to Ijmuiden; and

![Image](image_url)

\textbf{Figure 10: mv Aztec Maiden aground of Ijmuiden January 2012}

On 7 October 2011 \textit{mv Vechtborg} suffered a main engine failure north of the Dutch Wadden islands. \textit{Ievoli Black} was sent to the location, however \textit{mv Vechtborg} had anchored and immediate danger of grounding passed. \textit{Svitzer Salvage} subsequently signed a contract to tow \textit{mv Vechtborg}. Having taken the vessel in tow to Eemshaven the line parted before being reconnected within an hour.
2.9 FINLAND

The Finnish Ministry of the Environment operates the *Louhi* with a bp of 60t based at the Port of Upinniemi. The vessel is used for emergency towing, fire-fighting, icebreaking, mine-laying and to combat oil/chemical spills, and other rescue operations. She was launched in 2011 at a cost of €48m. The amount of oil transported in the Gulf of Finland has increased from 15 million tonnes per year in the early 1990s to 69 million tonnes in 2003 and up to 130 million tonnes in 2010 after the new Russian oil terminals became operational, increasing the risk of a large spill in the vulnerable sea area.

2.9.1 Recent Finnish ETV Intervention

A recent intervention by the Finnish ETV is précised below:

- On 24 December 2011 *Louhi* and *Linja*, a Finnish oil spill response vessel, were dispatched to the Gulf of Bothnia as a precaution after a tall oil (by-product of wood pulping) spill from the Arizona chemical plant near Soderhamn in Sweden. The Finnish recovery vessels prepared to join the spill combating operation in case the oil slick started drifting towards the Finnish coast. Although *Louhi* is able to operate in relatively high seas, the recovery effort was hindered and subsequently the oil slick was broken up by the storm on 27 December 2011.

2.10 POLAND

The Polish Ministry of Transport operates one ETV on charter, *Kapitan Poinc* with a bp of 74t. She is based in Gdynia and came into service early 1996.

2.11 ICELAND

A “needs analysis” for the purchase or hire of a multi-purpose coastguard vessel for the Icelandic Coast Guard was first submitted in September 2005. A contract was awarded for the building of a tug in December 2006 and the ÞÓR (120t bp) was eventually delivered to Iceland in October 2011. She performs a variety of tasks, including coastguard duties, management of Iceland’s EEZ, fishery control, SAR, emergency towing, pollution prevention, oil recovery, border control, helicopter refuelling, and fire fighting.
3 SUMMARY OVERVIEW OF ARRANGEMENTS IN OTHER EUROPEAN COUNTRIES

ETV provision in European waters falls into two broad categories.

The first is that of a capable salvage tug, operated either directly by the State or via a contractor, stationed in a defined location and on standby to respond. Any other activities performed by these vessels are tasks of opportunity and do not figure in the funding model.

The second model of operation seems particularly prevalent in Scandinavia and is that of a state provided multi-purpose offshore patrol vessel, deployed to carry out a number of “standing tasks” for the State and which is capable, when required, of carrying out emergency towing.

The advantages and disadvantages of each of the two categories are described in detail below.

3.1 OUTSOURCED SALVAGE TUG

The first category is that of a suitably capable outsourced salvage tug, stationed at a known location and on “stand-by” at a pre-determined notice to move.

The principal advantages of this model are that it requires the minimum degree of client supervision and does not unduly entangle the state in the legal aftermath of a shipping casualty.

Tugs of a given rated bollard pull, and their operation, are well understood by a diverse and flourishing towing industry. This means that contractual awards can follow vigorous competition to the benefit of the client. In addition, the certainty of a long term contract set against the volatility of the spot market can produce an equivalent day rate that is extremely competitive. A contract may include the provision of “stand-by” tonnage should the principal vessel become unavailable.

When, at the direction of the client, the contracted vessel attends the scene of an incident its presence may speed up the process by which interests for
the vessel “let” a towage contract or enter into a salvage agreement. This can occur if the contract allows the contractor to go “off hire” to the client and engage in a commercial operation to deal with the incident. Although this reduces the levels of certainty and control of “what happens next” from the State perspective, it has the benefit of avoiding the disruption of the many and complex interrelationships within the salvage industry that so often bring about a successful conclusion. Such disruption may be caused when the State becomes the lead salvor, and embroils the State as a party to the many and competing legal actions brought by the interests for ship, cargo and salvor.

The principle disadvantages to this model are the distortion of the normal pattern of commercial salvage activity, and the blurring of the line between legitimate state intervention and normal commercial arrangements. This can lead to delaying the emergence of a satisfactory commercial arrangement between ship and salvor that the State can monitor as well as which this blurring can be worsened if the contracted vessel wears State livery.

Experience in the UK has shown that a government funded ETV station gives the contractor a commercial advantage in that:

- The contractor has been paid to position an asset in an area of high risk; and
- The contractor’s mobilisation costs are funded by the client.

These contractor benefits can create circumstances where a commercial operator will consider it unviable to station assets in that area with the net effect of reducing commercial salvage capacity in the areas of highest risk.

Experience in the UK has also shown that in the early stages of an incident, inexperienced or overloaded ship masters are reluctant to enter into a contract apparently under duress which can cause delays and require the deployment of the state’s powers of intervention unnecessarily. This effect can be amplified if the contractor’s vessel wears state livery.

The wearing of state livery by a commercially contracted vessel has advantages and disadvantages generally. The advantages are that it
publicly demonstrates the role of the client in the protection of life and the environment, and it can create a “bubble of compliance” in that compliance with provisions such as MARPOL and the COLREGS normally improve if there is a realistic possibility that non-compliance will be observed. The disadvantages, in addition to that already stated, is that the reputation of the client is being upheld (or otherwise) by the contractor.

In terms of cost, this model of operation must be considered as an insurance premium, the benefits of which may only become visible over the long term, if at all. It is very difficult to measure the frequency and severity of consequences that did not arise because of the presence or employment of an ETV. When governmental spending is constrained, there may be a need to increase risk appetite to reduce programme spending such as ETV provision. Any secondary tasking that may have arisen through opportunity may well be considered as contingent capability and therefore discontinued on the basis that they were always unfunded, notwithstanding any “custom and practice” argument that may be mounted in defence by interested parties.

### 3.2 DIRECTLY OPERATED SALVAGE TUG

The principle advantages of this model over the outsourced model are that:

- Contractual overhead is saved;
- Potential exists for salvage awards to form a revenue stream to offset the running costs;
- Cost of capital to the State may well be extremely competitive; and
- Operationally, certainty and control is higher than that of the outsourced model.

The disadvantages have been touched on in the previous section. Firstly, unless there exists within the client organisation (see Section 7.1) or another State the capability to safely operate and crew such a vessel, a cost is generated to create such a capability to the point where potential savings are neutralised. Additionally, the client organisation acquires a manpower and capability that may not be easy to scale or shed if necessary. Furthermore, to retain a salvage award the client organisation is required to
become a salvor. Complex salvage operations are usually consortia, and it is difficult to imagine, post incident, how the client organisation would not have transported significant liability towards itself. This drives a significant legal and claims management overhead. The potential for a conflict of interest becomes a certainty when the most expedient course of action is the destruction of the casualty.

3.3 MULTI-PURPOSE OFFSHORE PATROL VESSEL (OPV)

Part 2 of this report explains in detail the functions that any state must discharge to a reasonable level of effectiveness to claim competence over an Exclusive Economic Zone. Each of those functions is greatly enabled by the ability to exercise dominance over a particular area, and this is often best achieved by an offshore patrol vessel. This is because the OPV offers the greatest capability to remain at the scene, and can operate in all weathers.

Many coastal states operate OPVs, using military vessels, revenue protection vessels, or Coast Guard vessels. OPVs are either adapted to the role from existing vessels or purpose built to a specific requirement. Increasingly, and particularly in Scandinavia, a trend is emerging for the multi role OPV, a design compromise intended to execute a number of functions and operated within a legal framework allowing it to do so. Often the burden of operation is shared, directly or indirectly, between government departments.

This report presents the option of the procurement of a multi role vessel, one of the functions of which is to provide an emergency towing capability. Other functions that might be carried out by such a vessel include:

- Fishery protection;
- Enforcement and compliance monitoring, including revenue protection, the observance of ship routeing schemes, and pollution of the sea by oil, sewage, garbage or other debris such as containers;
- Search and Rescue, including the capability to support SAR operations by helicopter co-operation or the suppression of fire;
- Scientific research;
- Seafarer training and development;
• Exercising sovereignty where required;
• Accident investigation or supporting underwater recovery operations; and
• Enhancing navigation safety by the maintenance of floating seamarks, wreck identification, and wreck marking.

The principal advantages of this model of operation are the opportunity to make savings across government by increased efficiency of employment, and the ability to flex an otherwise costly emergency towing capability at short notice from an asset that already benefits from assured funding.

It must be understood that the assistance offered by such a vessel is emergency towing in its strictest sense. Such a vessel would be expected to capture and stabilise a drifting casualty until relieved by salvors. This is because the design compromises of a multi role vessel would probably only offer a maximum of 100 tonnes bollard pull. Operating in this way does inherently avoid any subsequent legal or liability complications and does give the State more options for action during a salvage operation principally carried out by commercial interests.

The principal disadvantages of this model are the initial capital costs of a purpose built ship, partner organisation self-interest and the readiness with which partner organisations are prepared to moderate or modify their existing ambitions. There may be the potential to reduce research, development and design costs by relying upon technical support from other nations already operating such ships. One likely partner, the Irish Naval Service already possesses sufficiently trained and qualified personnel to crew and operate such a vessel which could offset some running costs.

This model is amenable to direct or outsourced operation, accepting the cost of risk transfer where applicable.
4 PROVISION FOR AN ETV

Chapter 28\(^2\) of the Bonn Agreement sets out operating guidelines and general procedures which could be considered by those who are considering the implementation of state-funded ETVs.

4.1 MARITIME RISK

It is generally considered that the maritime risk picture has changed in the last 25 years with a greater intolerance for unsafe practices. Shipping activities are more regulated, systematically managed and more closely monitored. The average age of the world fleet is lower and ships are more reliable, conversely ships are larger and technical complexity makes them more prone to failure. It is therefore reasonable to assume that there is less likelihood of a maritime casualty occurring to a large ship. However, when they do occur they are likely to have a greater impact.

The IRCG has the power, on behalf of the State, to intervene when it is clear that a stricken vessel is threatening the Irish coastline. The intervention instruments are given by the United Nation Convention on the Law of the Sea (UNCLOS) and are made more specific in IMO conventions such as the Intervention Convention and the Oil Pollution Preparedness, Response and Co-operation Convention (OPRC) and Vessel Traffic Monitoring Directive.

4.2 RISK MITIGATION

Risk mitigation is provided by a suite of control measures, discussed in detail in Part 2 of this report. These control measures are both preventative and responsive in nature, and the deployment of an ETV should be regarded as one of a range of options to be considered and include:

- Effective legislation to systemise and positively influence the way that ships are operated, such as construction, equipment, operation and training standards. These are set out in a raft of international conventions and transposed into the law of the coastal State. The

effectiveness of this transposition can be assisted by the establishment of disincentives, such as penalties or sanctions for non-compliance, and the means to monitor compliance and act when required;

- Effective infrastructure to monitor the movement of shipping traffic within the maritime domain. This includes use of passive means of detection, such as the reception of Vessel Monitoring Systems (VMS), Automatic Identification Systems (AIS) or Long-Range Identification and Tracking (LRIT) transmissions, or more active means such as radar and Close Circuit Television (CCTV). Active means of detection can capture the movements of vessels who either do not need to carry, or who are deliberately avoiding the use of VMS, AIS and LRIT;

- Effective maritime domain awareness. This is the enrichment of a geographical picture of shipping movements with information and intelligence that can inform the State as to the risk presented by shipping traffic. This awareness should seek to detect any disturbances from the normal pattern of life as early as possible as a potential precursor to an incident, which in turn increases the time available for a meaningful response; and

- Effective means of intervention. This is the availability of assets such as maritime patrol aircraft, rescue helicopters, patrol or rescue vessels, and the availability of skilled and experienced decision makers armed with the delegated powers of the state.

### 4.3 RISK ASSESSMENT

Risk assessments are recommended to support decisions on geographical positioning, operating area and capabilities of ETVs. Risk assessments should as a minimum account for the following hazards:

- Traffic density;
- Navigational dangers;
- Prevailing meteorological conditions;
- Off-shore installations/platforms;
- Environmentally sensitive areas; and
- Vessel characteristics.

This is examined in greater detail in Part 2 “Review of Pollution Prevention, Preparedness and Response Capabilities”.
4.4 CRITERIA FOR THE PROVISION OF AN ETV

The various criteria as defined by Marico Marine\(^3\) associated with ETVs are explained in Table 4.

### Table 4: ETV criteria

<table>
<thead>
<tr>
<th>Asset</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>An ETV that remains permanently on station.</td>
</tr>
<tr>
<td>Level 2</td>
<td>An ISM compliant tug that can be supplied to support salvage operations immediately on request irrespective of its commercial deployment.</td>
</tr>
<tr>
<td>Level 3</td>
<td>A tug secured through spot hire to support salvage operations (normally harbour tugs operating inshore).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ETV Type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>A tug with a towage capacity exceeding 200t BP (cargo ships more than 290 metres LOA).</td>
</tr>
<tr>
<td>Type 2</td>
<td>A tug with a towage capacity of 100 to 200t BP (tankers more than 290m LOA).</td>
</tr>
<tr>
<td>Type 3</td>
<td>A tug with a towage capacity of 50 to 100t BP (Cargo ships and tankers less than 290m LOA).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Response</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Category A</td>
<td>ETV should be a position to secure a tow within 12 hours.</td>
</tr>
<tr>
<td>Category B</td>
<td>ETV should be a position to secure a tow within 24 hours.</td>
</tr>
<tr>
<td>Category C</td>
<td>ETV should be a position to secure a tow within 36 hours.</td>
</tr>
<tr>
<td>Category D</td>
<td>ETV should be a position to secure a tow within 48 hours.</td>
</tr>
</tbody>
</table>

In addition to being fully equipped for the task, the ETV would be required to be manned with personnel suitably skilled in securing the tow of a disabled ship in what may well be challenging conditions. Failure to meet this standard compromises the utility of the emergency salvage service in

\(^3\) Marico Marine ‘Emergency Towing Vessel Assessment of Requirements’
fulfilment of the primary function and poses a potentially significant risk to the safety of those onboard.

4.4.1 Capability

The following factors should be considered as a minimum to the requirements for capability of an ETV:

- On-board equipment;
- Arrangements to include salvage expertise;
- Manoeuvrability under bad weather conditions;
- Adequate bollard pull;
- Draught restrictions;
- Configuration;
- Protective arrangements;
- Navigation, positioning and communication equipment;
- Regular training, exercises (offshore, simulator); and
- Expertise and number of crew (sufficient for boarding operations).

4.4.2 ETV Design

The event that firstly illustrated the case for “emergency towing” was the loss of the *Amoco Cadiz* and her entire cargo of 220,000 tonnes of crude oil off the Brittany coast in March 1978.

The key features of this scenario were:

- A disabled fully laden very large crude carrier (VLCC);
- Sea state 7 to 8;
- Close proximity to shore; and
- The master declining to inform authority or request assistance until the specific approval of the owners had been secured.

Assuming it has the time to reach the scene of a ship disablement, to be successful the ETV requires sufficient power to bring the vessel under
control. Research⁴ suggests that a tug of 7,000 horsepower would normally be adequate to handle a VLCC in 6m seas. This equates to approximately 93t bp. However, other research⁵ recommends 150bp suggesting a 50% power allowance for the influence of weather.

The loss of the post-panamax container ship *MSC Napoli* in January 2007 highlights the fact that the VLCC is far from the only type of large vessel whose disablement presents a significant pollution risk.

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5 TUGS RESOURCES AVAILABLE IN IRISH WATERS

There are limited towage resources currently working in Irish waters available to assist vessels in distress. A précis of harbour tugs of over 40 tonnes bp operating in Irish waters is shown in Table 5. However it should be recognised that harbour tugs will be restricted in their ability to assist a distressed vessel in bad weather in open waters and are no substitute for ocean-going salvage tugs which are equipped with specialised equipment and personnel.

Table 5: Irish based tugs over 40 tonnes bollard pull

<table>
<thead>
<tr>
<th>Tug</th>
<th>Port</th>
<th>BHP</th>
<th>BP (tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearl</td>
<td>Offshore Cork</td>
<td>6,150</td>
<td>70</td>
</tr>
<tr>
<td>Thrax</td>
<td>Bantry Bay</td>
<td>7,200</td>
<td>62</td>
</tr>
<tr>
<td>Celtic Isle</td>
<td>Bere Island</td>
<td>4,000</td>
<td>54</td>
</tr>
<tr>
<td>Alex</td>
<td>Cork</td>
<td>4,000</td>
<td>49</td>
</tr>
<tr>
<td>Beaufort</td>
<td>Dublin</td>
<td>5,150</td>
<td>50</td>
</tr>
<tr>
<td>Shackleton</td>
<td>Dublin</td>
<td>5,150</td>
<td>50</td>
</tr>
<tr>
<td>Celtic Rebel</td>
<td>Foynes</td>
<td>3,500</td>
<td>48</td>
</tr>
<tr>
<td>Celtic Banner</td>
<td>Kilrush</td>
<td>3,400</td>
<td>45</td>
</tr>
<tr>
<td>Gerry O’Sullivan</td>
<td>Cork</td>
<td>4,112</td>
<td>45</td>
</tr>
<tr>
<td>SMS Bison</td>
<td>Killybegs</td>
<td>3,216</td>
<td>44</td>
</tr>
</tbody>
</table>

5.1.1 Lee Towage – tugs Thrax and Alex

Thrax is a 62t bp azimuth reverse tractor tug with full fire-fighting capability. She is currently on long term charter to ConocoPhillips working in Bantry Bay Terminal providing escort and towing duties. It is understand that the IRCG has an informal arrangement with ConocoPhillips such that, subject to her not being required for terminal duties she may be seconded for ETV duties.
Figure 11: Thrax ‘pushing-up’ (left) and mt Alex (right)

mt Alex is an Azimuth Stern Drive (ASD) tug with 49t bp and fire-fighting capabilities. She is based in Cobh and on long term charter to ConocoPhillips at the Whitegate refinery. However, it is understood that Alex operates under a harbour licence and is therefore not permitted to operate outside the harbour area.

5.1.2 Port of Cork

mt Gerry O’Sullivan is a Voith Schneider tug with 45t bp with fire fighting capabilities operating in the Port of Cork.

Figure 12: mt Gerry O’Sullivan 45t bp
5.1.3 Celtic Tugs

Celtic Tugs, the towage and salvage division of the Mainport Group was setup in 2000 to service clients on the west coast of Ireland and operates principally from the port of Foynes. Celtic Tugs is the largest privately owned port towage and salvage fleet operator in Ireland. In November 2000 the company was awarded a long-term contract for the provision of three ASD tugs on the River Shannon to service various facilities on the estuary including the berthing of vessels of up to 180,000 dwt. The tugs are permanently manned, and the multi-purpose tug, *mt Celtic Isle* (see Figure 13) has a 54t bollard pull.

![Figure 13: Celtic Isle 54t bp (left) and mt SMS Bison 44t bp(right).](image)

The tug *Pearl* has the largest bollard pull of any tug currently operating in Irish Waters. She is an anchor handling supply vessel operated by Mainport and on charter to Marathon servicing the requirements of Kinsale Energy on the Kinsale Gas Field.

5.1.4 Sinbad Marine Services

Sinbad Marine Services Ltd is an integrated marine services company operating in Killybega on the northwest of Ireland providing ship agency, offshore support and marine plant hire services. *mt SMS Bison* (see Figure 13) owned and operated by Sinbad Marine Services is a 44t bp tug with
azimuthing propulsion systems engaged to carry out ship-handling and other harbour duties locally and on the spot market.

5.1.5 Dublin Port Company

Dublin Port Company has recently made a €16m investment with the procurement of two new 50t bp tugs namely; 'Shackleton' and 'Beaufort' (see Figure 14).

![Dublin Port Company - 50 tonnes bp tugs Beaufort and Shackleton](image)

Figure 14: Dublin Port Company - 50 tonnes bp tugs Beaufort and Shackleton

5.2 TUG RESOURCES UK AND NORTHERN EUROPE

Towage broker Samuel Stewart provides the UK MCA and IRCG with a weekly update of tug resources in Northern Europe of which on 24th August 2012 there were 44 tugs listed with a bollard pull greater than 100 tonnes.

Towage broker, Marint Offshore Services has a tug position “search by region” feature on their website. At the time of writing there are currently no salvage tugs based in the Irish Sea or on the west coast of Ireland. Marint also provide a real time programme of what tugs are available.
Anchor handling tugs with a bollard pull of up to 390 tonnes are primarily stationed in Bergen, Stavanger and Aberdeen; a number of which are available for immediate deployment. Steaming time from Aberdeen to Tuskar Rock is approximately 38 hours at 15 knots.

5.2.1 Neighbouring UK Ports Towage provision

A brief overview of harbour towage capacity in neighbouring UK ports is detailed below.

5.2.1.1 Milford Haven

Svitzer Towage operate ten azimuth stern drive tugs in the port ranging from 32 to 117 tonnes bollard pull.

![Svitzer Kilroom – 112t bollard pull](image)

5.2.1.2 Holyhead Towing

Holyhead Towing, based in Anglesey, support the offshore industry and have a variety of vessels including two 55 tonnes bp anchor handling tugs.

5.2.1.3 Liverpool

Svitzer Towage / Smit Towage have 12 tugs working in the Port of Liverpool of up to 70 tonnes bp.
6 THE AVAILABILITY OF SALVAGE CREWS AND RESOURCES

6.1 CASUALTY RESPONSE

The IRCG has the responsibility for pollution prevention through casualty intervention and if necessary salvage control of the operation by monitoring, issuing directions and taking direct action under the Ministers statutory powers on casualty intervention. However it should be noted that currently the IRCG Pollution / Salvage branch is staffed by one person and it is unrealistic to expect one person to respond efficiently and effectively in the event of a major incident without seeking assistance from within the IRCG or more probably specialised external assistance. It is understood that London Offshore Consultants Ltd have previously made personnel available to the IRCG as and when required.

Casualty response and other salvage services are provided, on a global basis, by the member companies of the International Salvage Union (ISU).

In the vast majority of salvage cases, the main priority is to prevent or, at the very least, minimise environmental damage.

6.2 SALVAGE RESOURCES

A précis of major salvage companies based near continental or UK which can mobilise specialised equipment and generally have a worldwide network of salvage masters, engineers and naval architects, along with technical and operations personnel catered toward any salvage operation available anytime anywhere are listed below:

- SMIT Salvage in London;
- Svitzer Salvage has a dedicated emergency response team in their operations centre based in the Netherlands; and
- Titan Salvage has an office and base in Newhaven.

Smaller companies based in Ireland capable of undertaking smaller salvage operations are namely:
• Irish Sea Contractors based in Rosslare Harbour have undertaken salvage and wreck removal projects assisting larger salvage operators as well as the IRCG; and

• Tuskar Rock Marine also based in Rosslare has undertaken wreck removal of fishing vessels and yachts.

Braemar Howells operate the Marine Pollution Salvage Centre (MPSC), the UK Government’s spill response service and salvage equipment stockpile based in Milford Haven. They provide oil spill response; chemical pollution and MARPOL waste reception facility services.

The use of commercial contractors to provide assets and infrastructure on behalf of the State can be convenient and cost effective. However, it is recommended that in such cases the client puts in place a rigorous vetting and testing regime to ensure contractual compliance.
7 IDENTIFIED POTENTIAL THIRD PARTIES

7.1 IRISH DEFENCE FORCES

As explored in Section 3 benefits can be achieved if a capability exists within the State to directly operate and crew an appropriate tug.

The Irish Defence Forces encompass; the Army, Naval Service, Air Corps and Reserve Defence Force. The Defence Forces are currently going through a major reorganisation.

A telephone discussion was had with, Mr J Kearney, Contracts Manager at the Department of Defence, who intimated that in the event that the State wished to pursue the procurement of an offshore multi-purpose vessel capable of emergency towing the Flag Officer would be open for holding discussions with the IRCG with regard to the possibility of a joint service provision and funding.

7.2 SINBAD MARINE SERVICES (SMS)

17th August 2012: telecon with Mr J Parkinson Managing Director, and Marine Manager, Mr Noel McGettigan of SMS (see Section 5.1.4).

Mr Parkinson explained that in 2010 SMS had meetings with the IRCG with regards to providing an ETV and are prepared to re-open those discussions.

SMS requirements were unrestricted and they would be prepared to negotiate with IRCG on all aspects of ETV provision including; type and size of ETV; new or second hand; chartering arrangements; management and crewing arrangements; and salvage award payment. Whilst it is recognised that there may be opportunities for an ETV to undertake secondary roles which would generate income Mr Parkinson maintained the view that the ETV should not be used for those roles as it detracts from the primary ETV role being protecting the Irish coastline.

Mr Parkinson provisionally estimated that the rate for a 100t bp tug would be in the order of €6,000 per day (excluding fuel and lube oils) and for 200t bp in the order of €18,000 per day based on a long term charter.
Mr Parkinson later spoke with Damen ship builders for an indicative cost for a 100 tonne bollard pull tug suitable for operations off the west coast of Ireland. They gave an indicative cost in the region of €18–20 million (depending on equipment, oil response requirements, etc.).

7.3 MAINPORT GROUP

A telephone discussion was had with Captain Dave Hopkins, Mainport Marine Director on 10th September who confirmed that Mainport (see Section 5.1.3) had had many ‘stop and go’ consultations with the IRCG regarding ETV provision over the years. However, should the IRCG be in a position to move positively forward then Mainport would be very supportive in providing advice and expertise on appropriate sourcing and financing of such a project. Captain Hopkins believed that in order to offset some of the costs a multi-purpose vessel was the best way forward.

Captain Hopkins estimated that the spot – market day rate for a 200 tonne bollard pull tug to be currently in the order of €35- 40,000, with a day rate based on a five year charter to be €18 – 20,000.

As described in Section 5.1.3 *mv Pearl* at 70t bollard pull is currently the largest tug operating on the Irish coast. She is operating in the Kinsale oil field on long-term charter as both a cargo and safety standby vessel. Captain Hopkins said that in the event of an emergency he felt sure that subject to Mainport providing a relief tug (*mv Celtic Isle*) the *Pearl* would be released by the charterers for emergency towing duties.

With regard to the provision of directly operating specialised multi-purpose vessels Captain Hopkins voiced concerns about the difficulties of sourcing appropriate locally trained crew.

7.4 MENAPIA SHIPPING CONSORTIUM

On 1st October 2012 a telephone call was held with Mr Kieran Burns of ‘Burns, Shanahan Chartered Accountants’ who as part of the Menapia
Shipping Consortium last held discussions with the IRCG in July 2011 regarding their proposals for the provision of an ETV for Ireland.

Mr Burns explained that the consortium, which consisted of several shipping representatives, had identified many possible secondary roles, involving a cross-section of public bodies, to make the ETV feasible and also of benefit to the Exchequer and the people of Ireland.

A detailed discussion was later held with Mr Adrian Martin, one of several mariners involved with the consortium.

It is understood that Menapia Shipping recommendations included that two suitable vessels should be placed in two strategic places; Foynes and Rosslare to not only act as ETVs but to also provide emergency teams for responding to pollution incidents in rivers, lakes and water courses around Ireland.
8 POSSIBLE ROLE FOR AN ETV IN LIGHT OF INCREASED OIL/GAS EXPLORATION AND EXPLOITATION

The economics of oil and gas exploitation are based upon the demand for hydrocarbons for fuel and manufacturing set against the cost of exploration and exploitation. The technology and techniques for recovering oil and gas from under the sea are steadily improving, making economic exploitation possible in depths of water or at distances from land that would previously have been uneconomic or impossible. The inference is that as the global economy recovers, there will be a renewed interest in the oil and gas reserves within the Irish EEZ. This is covered in greater detail in Part 2 of the report.

The Sea Pollution Act covers pollution from ships and from offshore installations or pipelines. This means that there are distinct activities that pose a risk to the marine environment. They include ship sourced pollution, sub categorised into passing traffic, in and outbound traffic, and domestic traffic. These are further categorised into commercial, non-commercial and military/governmental vessels. They also include oil exploration and exploitation, at sea and ashore.

Some activities are easier, either legally, administratively or politically, to tax or levy than others, if it were to be directed towards ETV provision. The potential for a levy on shipping is limited, as the majority of the risk from commercial shipping is presented by passing traffic enjoying a right of innocent passage. The amount of shipping calling at Irish ports has fallen in recent years, and is somewhat skewed by the well-travelled ferry routes. Additionally, an ETV cannot mitigate the risk types posed by offshore exploration or exploitation i.e. damage to a platform by a ship caused by the ship. An equitable levy model would be therefore complex to devise and administer.

The presence of oil exploration activity brings with it anchor handling vessels capable of being used as ETVs of opportunity. However, these vessels are expensive to charter and are not usually available to join a
salvage operation unless the earnings prospects were so high that the
towage operator could be persuaded to depart, albeit temporarily from a
contractual arrangement with an oil major. The risk assessment contained
in Part 2 of this report also illustrates that the location of oil and gas
exploration and exploitation is removed from the area’s most at risk from
shipping traffic.

Another view that could be taken is that the beneficiaries of the “insurance
policy” afforded by the presence of an ETV should contribute to the
premium. This may imply some form of levy on those interests which are
put at risk by oil pollution, principally fishing, aquaculture and tourism. As
before, any equitable burden sharing arrangement would be complex and
controversial.
9  THE RANGE OF COSTS FOR PROVIDING AN ETV

9.1  COSTS ASSOCIATED WITH AN ETV

In practice an ETV is far more likely to be deployed to recover or stabilise a casualty rather than prevent it. In terms of environmental consequence, the “worst credible scenario” remains the loss of a large laden tanker through a catastrophic event. Estimating the benefit from preventing the loss of a large laden tanker through ETV intervention is problematic given the large range of available consequence costs.

The reported cost for each of the “Level 1 Type 2” ETV (see Section 4.4) provided under contract to the UK Maritime and Coastguard Agency (MCA) was approximately £3m (€3.8m) per annum which was not directly analogous to a commercial charter rate. At approximately £8,200 (€10,330) per day, the price paid by the MCA was, at the time, significantly less than the vessels could secure on the open market.

The total cost of the contracts for temporary provision of the emergency towing vessel from 17 October 2011 to 31 May 2012 was £3,783,212 (€16,740 (€21,100) daily rate). The total cost reflects fixed and variable costs (including fuel costs and port dues which vary according to the level of activity). This equates to approximately double the cost since the withdrawal of permanent cover.

The cost of emergency towing vessels in the waters around Scotland in each of the financial years since 2005 is shown in Table 6. The annual variability arises from fluctuations in fuel costs, port dues and levels of activity.

6 http://www.publications.parliament.uk/pa/cm201213/cmhansrd/cm120620/text/120620w0001.htm
Table 6: ETV costs for Scotland

<table>
<thead>
<tr>
<th>Financial year</th>
<th>£</th>
<th>€</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-06</td>
<td>5,327,351</td>
<td>6,712,462</td>
</tr>
<tr>
<td>2006-07</td>
<td>5,569,042</td>
<td>7,016,992</td>
</tr>
<tr>
<td>2007-08</td>
<td>5,589,862</td>
<td>7,043,226</td>
</tr>
<tr>
<td>2008-09</td>
<td>5,705,843</td>
<td>7,189,362</td>
</tr>
<tr>
<td>2009-10</td>
<td>5,497,043</td>
<td>6,926,274</td>
</tr>
<tr>
<td>2010-11</td>
<td>5,048,743</td>
<td>6,361,416</td>
</tr>
<tr>
<td>2011-12</td>
<td>4,316,341</td>
<td>5,438,590</td>
</tr>
<tr>
<td>2012-13 (until 31/5/12)</td>
<td>650,157</td>
<td>819,220</td>
</tr>
</tbody>
</table>

It should also be noted that a disabled ship is under no specific obligation to engage in a commercial contract with a Government sponsored tug. It is understood that the UK Government, is only empowered to intervene and require the master to make the tug fast where there is a significant threat of pollution which may also be the case with the powers given to IRCG by the State.

9.2 VALUE FOR MONEY OPTIONS

The principals of a “Value for Money Analysis” previously undertaken by Marico Marine on behalf of the MCA in 2008 are still considered to be relevant for this study. They have therefore been updated and adjusted accordingly and presented below.

In the event that the IRCG does decide to pursue the needs for an ETV then the following options should be considered:

- **Option 1:** Shared-risk franchise (time charter) agreement under competitive tender, the contractor/ship owner responsible for the delivery of the tug, of standard commercial design and suitably trained crew;
- **Option 2:** Procure a second-hand tug, adapt for purpose to the extent that it is practicable to do so and engage a management company/IRCG department to superintend their operations including the supply of personnel;
- **Option 3:** Procure a new tug of a broadly standard design optimised for all aspects of towage, including the recovery of

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7 Emergency Towing Vessel Assessment of Requirements
heavy fuel oil in bulk, managed by a specialist commercial operator / IRCG;

- **Option 4**: Procure a new multi-purpose tug (Offshore Patrol Response Vessel) with the capability to undertake a range of coastal zone management roles, e.g., hydrographic survey, maintenance of aids to navigation, pollution response etc., operated on behalf of the IRCG supplementing Irish Light Vessel (ILV) Granuaile.

**Table 7** outlines the advantages and disadvantages as well as an approximation of costing for each of the four options:

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Option 1: Indicative cost:</strong></td>
<td></td>
</tr>
<tr>
<td>€18,000/day crewed (excluding fuel) five year contract for 200t bp</td>
<td>Minimal initial capital investment required.</td>
</tr>
<tr>
<td>€9 -10,000 / day (excluding fuel) five year charter for 100t bp</td>
<td>Charter rates could increase above interest costs of capital required to</td>
</tr>
<tr>
<td>€4,000 / day (excluding fuel) five year bare-boat for 100t bps</td>
<td>procure new vessel.</td>
</tr>
<tr>
<td>Under-performing contracts can be terminated.</td>
<td>Suitable commercial tugs may not be available to meet the demands presented</td>
</tr>
<tr>
<td>Vessel capable of undertaking a range of towage tasks including:</td>
<td>The hirer may have little control over marginal operational costs.</td>
</tr>
<tr>
<td>training, escort, policing waters, fishery protection etc.</td>
<td></td>
</tr>
</tbody>
</table>

---

*Indicative rates sourced from Østensjø Towage*
**Option 2: Approximate costs**

**€8-10m suitable second hand tug of 100t bp; €1.3m p.a. crewing costs based on 10 crew on 24/7 operations; and €1m p.a. operating cost.**

| Asset can be secured at lower cost in comparison to new vessel. | High costs of modification with minimal residual re-sale value. |
| Established design likely proven in service. | Obsolete systems with reduced reliability and increased fuel consumption, lack of spares. |
| Immediate access to vessels. | Suitable second-hand vessels seldom available and command a premium price. |
| Use of specialist ship manager secures economies of scale through unified training and spares supply. | Crew potentially not motivated to act in the best interests of the hirer. |

**Option 3: Approximate costs**

**€20m for a new modified “standard design” tug of an acceptable bp.**

**Operational costs similar as Option 2.**

| Vessel design optimised for emergency management at early stage in build. | Likely to take several years to bring into service. |
| Vessel dedicated to single task, reducing overall operational costs. | Limited wider coastal zone management functionality. |
| Vessel equipped with the most reliable and fuel efficient systems. | Premium price to be paid to the shipyard. |
| Asset under control of emergency service provider. | Need to negotiate long-term ship management contract, which may ultimately prove to be inefficient. |
Option 4: Approximate costs. €30-35m for new purpose built tug to cover all requirements. Operational costs similar to Option 2.

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economies of scope as the vessel can engage in a wide range of coastal zone management functions.</td>
<td>Need to maintain full suite of equipment and trained personnel deemed potentially necessary for multi-tasking role.</td>
</tr>
<tr>
<td>Government owned and managed asset not subject to commercial constraints.</td>
<td>Crew has minimal, specific experience in the towage of disabled ships in challenging conditions.</td>
</tr>
<tr>
<td>Design optimised to needs of public service. Utilise proven R&amp;D.</td>
<td>Protected iterations in design to meet wide-ranging scope of potential.</td>
</tr>
<tr>
<td>High profile asset for promotion of coastal zone management interests.</td>
<td>Politically damaging if ‘multi role’ concept ultimately results in a vessel essentially unsuitable for any role.</td>
</tr>
</tbody>
</table>

A variation of the “planning balance sheet” approach to the indices outlined may also be used to illustrate the relative costs and benefits of the different options, which also provides some overall comparative scores as shown in Table 8 below.
### Table 8: Comparative costs and benefits of options

<table>
<thead>
<tr>
<th>Options</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Costs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital (Purchase)</td>
<td>V.Low</td>
<td>Medium</td>
<td>High</td>
<td>V.High</td>
</tr>
<tr>
<td>Modification</td>
<td>Medium</td>
<td>Medium</td>
<td>Medium</td>
<td>V.Low</td>
</tr>
<tr>
<td>Operating</td>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Introduction Time</td>
<td>V.Low</td>
<td>Low</td>
<td>High</td>
<td>V.High</td>
</tr>
<tr>
<td>Ranked Cost Score:</td>
<td>9</td>
<td>11</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>(V High = 5, High = 4, Medium = 3, Low = 2, V. Low =1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Benefits</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fitness for Purpose</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design suitability</td>
<td>-</td>
<td>+</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Crew competence</td>
<td>++</td>
<td>-</td>
<td>++</td>
<td>--</td>
</tr>
<tr>
<td>Availability</td>
<td>+</td>
<td>-</td>
<td>++</td>
<td>--</td>
</tr>
<tr>
<td>Operational Flexibility</td>
<td>--</td>
<td>--</td>
<td>-</td>
<td>++</td>
</tr>
<tr>
<td>Ease of Replacement</td>
<td>++</td>
<td>-</td>
<td>+</td>
<td>--</td>
</tr>
<tr>
<td>Long-Term Security</td>
<td>--</td>
<td>+</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Ranked Benefit Score</td>
<td>15</td>
<td>13</td>
<td>20</td>
<td>14</td>
</tr>
<tr>
<td>(‘++’ = 4, ‘+’ = 3, ‘-’= 2, ‘--’ = 1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This methodology suggests that, on a measure of the difference between ranked benefit and cost, or if expressed as a benefit per unit cost as shown in Table 9, Option 1 – shared-risk franchise - offers enhanced ‘VFM’ in comparison to Option 3 – a new, dedicated ETV; the costs of the former are also assessed to be lower. Conversely, Option 4 – a multi-role vessel operated by the public sector – is assessed to deliver the lowest ‘VFM’.

**Table 9: Comparative Benefit per Unit Cost**

<table>
<thead>
<tr>
<th>Option</th>
<th>Benefit per Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.67</td>
</tr>
<tr>
<td>2</td>
<td>1.18</td>
</tr>
<tr>
<td>3</td>
<td>1.33</td>
</tr>
<tr>
<td>4</td>
<td>0.93</td>
</tr>
</tbody>
</table>

It must be stressed that this analysis is limited in scale, qualitative – therefore no specific monetary values are assigned to the ‘scores’ - and highly subjective in nature; an alternative opinion in relation to the indices assessed would inevitably produce a different result.
10 FORTHCOMING OR PROPOSED IMO OR EC REQUIREMENTS FOR ETV PROVISION

At the time of writing there are no known forthcoming or proposed IMO or EC requirements for ETV provision that will or may affect Ireland.

However, without specifically requiring the provision of ETVs, or laying down operational service standards to be met, IMO and EU oblige member states to facilitate “places of refuge” for disabled vessels and, with that, to have in place a suitable salvage vessel to meet their needs.

10.1 KOMMUNENES INTERNASJONALE MILJØORGANISASJON (KIMO)

Kommunenes Internasjonale Miljøorganisasjon (KIMO) is a Local Authorities International Environmental Organisation founded by local municipalities with a shared concern for the state of the environment. KIMO is designed to give municipalities a political voice at the international level, to share best practice and to find solutions to marine political problems that affect coastal communities.

KIMO Ireland currently has two members; Wexford and Fingal County Councils.

In 2011 KIMO urged the European Commission and Member States to introduce legislation to ensure that:

- ETV provision is a requirement for each member state with a coastline;
- ETVs will be dedicated ocean going tugs equipped for saving life, counter pollution and fire fighting activities;
- The vessel will be able to aid any vessel type that is reasonably expected to use its waters;
- To ensure that the ETV’s are stationed at appropriate intervals to ensure adequate response times; and
- That the vessels will always be on thirty minutes standby.
10.2 EMERGENCY TOWING ARRANGEMENTS

As from 1st January 2012, SOLAS Regulation 11-1/3-4 of 2008 and the requirements for emergency towing were amended to apply to all vessels and require all vessels, including tankers, to be provided with an emergency towing procedure. The amendment details that all vessels must be provided with a ship-specific emergency towing procedure, which must be carried on board the ship for use in emergency situations. It must be based on existing arrangements and equipment available on board the ship.

The new SOLAS requirement states: “ships shall be provided with a ship-specific emergency towing procedure. Such a procedure shall be carried aboard the ship for use in emergency situations and shall be based on existing arrangements and equipment available on board the ship.”
11 CO-OPERATION WITH OTHER STATES FOR MUTUAL ASSISTANCE

11.1 IRCG / MCA AGREEMENT

There is a history of co-operation between the IRCG and the UK HM Coastguard with a bilateral operational agreement to codify the duties placed on both states under the 1979 SAR Convention and under the multilateral Bonn Agreement. Several studies, including the Eagle Lyon Pope study for Ireland\(^9\) and the Marico Marine\(^{10}\) study for the UK, have made recommendations that made the prospect of a joint UK/Irish ETV a possibility. These were that both states have risk areas in the southern Irish Sea, and that both states could benefit from ETV coverage in this area.

As a part of the 2010 Comprehensive Spending Review, UK ETV provision was withdrawn on the grounds that salvage and towage arrangements should be left to commercial interests to provide, and the money spent by the state was considered an undesired subsidy. As such the ETVs were withdrawn as a matter of policy. Although the Minch station has been reinstated until 2015, following an essentially political debate, there are no plans to reverse the decision made about the other three stations, or the policy decision generally. As such the prospects for a UK/Irish joint venture appear to be bleak.

11.2 EUROPEAN MARITIME SAFETY AGENCY (EMSA)

EMSA is tasked with providing technical and scientific assistance to the European Commission and Member States in the proper development and implementation of EU legislation on maritime safety, security and preventing pollution from shipping and thus has in place an action plan for Oil Pollution Preparedness. A detailed review of the EMSA provision is given in Part 2 of this report.

\(^9\) IRCG: Pollution Prevention, Preparedness and Response Capabilities Study 2008

\(^{10}\) Emergency Towing Vessel Assessment of Requirements
12 CONCLUSIONS

The following conclusions and observations are made having analysed available detail including; previous reports, existing towage assets, ETV arrangements in other European countries as well as assessing the range of costs and various conditions for providing ETV capacity:

- The IRCG currently delivers its marine emergency response through a mixture of declared resources and craft / services of opportunity;
- The IRCG has the powers, on behalf of the State, to intervene when it is clear that a stricken vessel is threatening the Irish coastline;
- Without specifically requiring the provision of ETVs, or laying down operational service standards to be met, IMO and EU oblige member states to facilitate “places of refuge” for disabled vessels and, with that, to have in place a suitable salvage vessel to meet their needs;
- The Irish EEZ has a significant number of vessels of all types and sizes, very often carrying hazardous cargoes, passing through the area and therefore considered to be at risk to shipping incidents;
- It is considered that shipping activities have generally improved over the last generation and are now better regulated, managed and more closely monitored;
- Tankers built since 1996 must have a double hull or be of equivalent design. Depending on their age and tonnage, single-hull tankers should be withdrawn by 2015;
- In recent years there have been significant developments in ship design and where once the need to manage a large disabled tanker was viewed to be largely if not solely the focus for emergency salvage, introduction of ultra large container vessels (400m, 15,000 TEU, maximum speed 25 knots) presents salvors with a new challenge;
- There has been a 25% downturn in vessels entering Irish ports over the last five years;
- Risk mitigation is provided by a suite of control measures including effective:
  - Legislation;
  - Infrastructure in place to monitor the movement of passing traffic;
  - Maritime domain awareness which can inform the State as to the risk presented by shipping traffic; and
- Intervention i.e. availability of assets including experienced decision makers.

- The primary function of an ETV is to intervene and prevent the escalation of a low consequence ship disablement event turning into one of catastrophic proportions;

- In June 2012 the UK government announced that the “state provision of ETVs does not represent a correct use of tax-payers money” and reduced the ETV fleet from four tugs to one tug which covers the Minches and the Pentland Firth and is chartered until 2015;

- The effective and long term management of a casualty incident by the IRCG is limited due to the lack of personnel and will undoubtedly require the assistance of external resources in the event of managing a long-term incident;

- ETV provision in European coastal states broadly falls into two categories:
  - A dedicated and capable salvage tug stationed in a defined location and on standby to respond; and
  - A multi-purpose offshore patrol vessel deployed to carry out a number of “standing tasks” for the State and which is also capable of carrying out emergency towing.

- A multi-purpose offshore patrol vessel, albeit with very high capital costs, can make savings across government by increased efficiency of employment, and the ability to flex an otherwise costly emergency towing capability at short notice from an asset that already benefits from assured funding;

- A suitably capable salvage tug operation can be considered as an insurance premium, the benefits of which may only become visible over the long term, if at all, as it is very difficult to measure the frequency and severity of consequences that did not arise because of the presence or employment of an ETV;

- Tug resources in Irish waters are limited with only two available tugs of greater than 60 tonnes bp, both of which are on long term charters;

- Large anchor handling tugs upwards of 200t bp based in Aberdeen, Bergen and Stavanger are available on the spot market;

- There is limited enthusiasm from potential third parties based in Ireland, to provide an ETV other than Menapia Shipping Consortium whom it is understood have produced detailed analysis of providing a cost effective service to the State;
• Negotiations with the UK MCA to produce a UK/Ireland joint contingency plan for counter pollution and search and rescue operations in the Irish Sea are on-going;

• The UK draft National Contingency Plan ensures effective co-operation in the event of an incident in the Irish Sea which may affect the interests of both or either country;

• The lack of an international cost sharing agreement and the likelihood of a joint ETV venture with either France or the UK appears unlikely;

• Due to the rising costs of tugs and manpower commercial salvage operators do not station fully equipped tugs in strategic locations;

• Experience elsewhere in Europe suggests that the likeliest vessel requiring assistance is small enough to require a relatively modest tug with a 100 – 150t bollard pull in order to significantly reduce the drift rate; and

• The procurement of a new multi-role vessel, operated directly or through ship managers may present an opportunity to realise a revenue stream, or an improved cost benefit by increasing efficiency across government. However, although highly subjective in nature this study suggests that when comparing costs and option benefits a shared risk franchise (Option 1) would offer the best value for money.
## GLOSSARY OF ABBREVIATIONS AND TERMS

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AHST</td>
<td>Anchor Handling Supply Tug</td>
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<tr>
<td>AIS</td>
<td>Automatic Identification System</td>
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<tr>
<td>ASD</td>
<td>Azimuth Stern Drive</td>
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<tr>
<td>Bp</td>
<td>The measure used to determine the towage power of a tug, normally expressed in tonnes.</td>
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<tr>
<td>COLREGS</td>
<td>The International Regulations for Preventing Collisions at Sea 1972 are published by the IMO, and set out, inter alia, the &quot;rules of the road&quot; or navigation rules to be followed by ships and other vessels at sea in order to prevent collisions between two or more vessels.</td>
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<tr>
<td>CTL</td>
<td>Constructive Total Loss</td>
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<td>CSR</td>
<td>Comprehensive Spending Review</td>
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<td>Dwt</td>
<td>Deadweight tonnes – the total weight of the cargo carried plus fuel etc. i.e. the maximum load that can be carried without submerging the load line.</td>
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<tr>
<td>ECTF</td>
<td>European Community Task Force</td>
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<tr>
<td>EEZ</td>
<td>Exclusive Economic Zone</td>
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<tr>
<td>ERV</td>
<td>Emergency Response Vessel</td>
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<tr>
<td>ELP</td>
<td>Eagle Lyon Pope</td>
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<tr>
<td>EMSA</td>
<td>European Maritime Safety Agency</td>
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<tr>
<td>ETV</td>
<td>Emergency Towing Vessel</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>FiFi</td>
<td>Fire Fighting</td>
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<tr>
<td>GMDSS</td>
<td>Global Maritime Distress and Safety System</td>
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<tr>
<td>Acronym</td>
<td>Definition</td>
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<tr>
<td>GtGP</td>
<td>Guide to Good Practice on Port Marine Operations</td>
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<tr>
<td>HAZMAT</td>
<td>Hazardous Materials</td>
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<tr>
<td>HNS</td>
<td>Hazardous and Noxious Substance</td>
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<tr>
<td>ILV</td>
<td>Irish Light Vessel</td>
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<tr>
<td>IMO</td>
<td>International Maritime Organisation</td>
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<tr>
<td>INS</td>
<td>VTS Information Service</td>
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<tr>
<td>IRCG</td>
<td>Irish Coast Guard</td>
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<tr>
<td>IRPRZ</td>
<td>The Irish Pollution Responsibility Zone</td>
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<tr>
<td>ISM</td>
<td>International Safety Management</td>
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<tr>
<td>ISU</td>
<td>International Salvage Union</td>
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<tr>
<td>ITOPF</td>
<td>The International Tankers Owners Pollution Federation</td>
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<tr>
<td>LNGC</td>
<td>Liquefied Natural Gas Carrier</td>
</tr>
<tr>
<td>loa</td>
<td>Length overall</td>
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<tr>
<td>LOF</td>
<td>Lloyd’s Open Form - formally Lloyd’s Standard Form of Salvage Agreement, but more commonly referred to as LOF, is a standard legal document published by Lloyds of London for a proposed marine salvage operation.</td>
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<tr>
<td>LRIT</td>
<td>Long Range Identification Tracking</td>
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<tr>
<td>Marico Marine</td>
<td>Marine and Risk Consultants Ltd</td>
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<tr>
<td>MARPOL</td>
<td>The MARPOL convention is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes.</td>
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<tr>
<td>MAS</td>
<td>Marine Assistance Service</td>
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<tr>
<td>MCA</td>
<td>Maritime and Coastguard Agency</td>
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<tr>
<td>MCCIP</td>
<td>Marine Climate Change Impacts Partnership</td>
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<tr>
<td>Acronym</td>
<td>Definition</td>
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<tr>
<td>MoD</td>
<td>Ministry of Defence</td>
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<tr>
<td>MPRT</td>
<td>Marine Pollution Response Team</td>
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<tr>
<td>MPSC</td>
<td>Marine Pollution Salvage Centre</td>
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<tr>
<td>MRCC</td>
<td>Marine Rescue Coordination Centres</td>
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<tr>
<td>MRSC</td>
<td>Marine Rescue Sub Centre</td>
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<tr>
<td>NCP</td>
<td>National Contingency Plan</td>
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<tr>
<td>NMOC</td>
<td>National Maritime Operations Centre</td>
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<tr>
<td>NRA</td>
<td>Navigation Risk Assessment</td>
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<tr>
<td>OCIMF</td>
<td>Oil Companies Information Marine Forum</td>
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<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development:</td>
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<tr>
<td>OPRC</td>
<td>Oil Pollution Preparedness Response and Cooperation</td>
</tr>
<tr>
<td>OPV</td>
<td>Offshore Patrol Vessel</td>
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<tr>
<td>PMSC</td>
<td>Port Marine Safety Code – a national standard for port safety in the UK with the aim ‘to improve safety for those who use or work in ports, their ships, passengers and cargoes and the environment’.</td>
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<tr>
<td>SAR</td>
<td>Search and Rescue Operations</td>
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<tr>
<td>SMS</td>
<td>Safety Management System – the organisational structure, processes, procedures and methodologies that enable the direction and control of the activities necessary to meet safety requirements and safety policy objectives.</td>
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<tr>
<td>SOLAS</td>
<td>Safety of Life at Sea</td>
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<tr>
<td>STCW</td>
<td>Standards of Training Certification and Watchkeeping</td>
</tr>
<tr>
<td>TOS</td>
<td>VTS Traffic Organisation Service</td>
</tr>
<tr>
<td>TEU</td>
<td>Twenty foot equivalent unit - an inexact unit of cargo</td>
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<tr>
<td>Acronym</td>
<td>Definition</td>
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<tr>
<td>VFM</td>
<td>Value for Money</td>
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<tr>
<td>VHF</td>
<td>Very High Frequency</td>
</tr>
<tr>
<td>VLCC</td>
<td>Very Large Crude Carrier</td>
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<tr>
<td>VMS</td>
<td>Vessel Monitoring Systems</td>
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<tr>
<td>VSP</td>
<td>Voith Schneider Propulsion</td>
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<tr>
<td>VTMIS</td>
<td>Vessel Traffic Monitoring and Information System</td>
</tr>
<tr>
<td>VTS</td>
<td>Vessel Traffic Service</td>
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</table>

capacity used to describe the capacity of container ships.