



TRA Visions 2014

Project Abstract Template – This template is to be used for submitting an abstract explaining what your idea is all about. It should be no more than a few paragraphs and should be submitted by the 30th of November 2013.

Idea Number:

PILLAR / TRANSPORT MODE	
ROAD ☐	RAIL ☐
MARINE ☒	CROSS MODAL ☐
Project Related to:	☒ RA1: Environment and Energy ☐ RA2: Industry Competitiveness ☐ RA3: Logistics and Mobility Systems and Services ☐ RA4: Safety and Security ☐ RA5: Transport Infrastructures ☐ RA6: Transp. Policy Res./Socio-econ./Human sci. ☐ RA7: Vehicles & Vessels Technologies

Project Abstract:

Subsea Arctic Oil Platform – An Autonomous Subsea System for Extraction and Transportation of Petroleum in the Arctic Environment

Although there is a constant growth in renewable energy technologies, petroleum is still the main source of energy used in the world. Studies have shown that the Arctic region has a significant amount of the petroleum resources of the world, approximately 20%, that are still not used. However, the extraction of these oil reserves will occur at a higher cost and risk than what is currently the case. This is due to the harsh environment, where certain obstacles have to be overcome such as ice movement, very low temperatures, large depths in cold water and polar nights.

In order to deal with the above mentioned difficulties, a new system has been designed to take advantage of these energy resources. The system's major advantage is that it combines existing and future technologies. The infrastructure consists of two main systems. Firstly the oil extraction platform will be submerged into the water and moved down to the seabed, thus avoiding any climate issues. In addition to this, the petroleum will then be directly transported to the shore by a revolutionary system based on a subsea tunnel distribution, which on the other hand will be suspended from the ocean floor.

Another advantage about this concept is that safety of life at sea has been vigorously increased due to unmanned and autonomous devices with a global remote technology to control all the systems. In order to provide maximum security, oil spillage interference and drilling systems are installed in the rig and also throughout the subsea tunnel web distribution. Furthermore, the possibilities of collision, as well as the possibility of oil spillage, have been completely eliminated, which are usually related to traditional transport by ship methods.

This kind of petroleum extraction and transport makes a perfect compromise between benefiting from the Arctic's natural resources and a maximum possible preservation of its astonishing natural environment.

