Factsheet for new measures under Article 13 of Marine Strategy Framework Directive 2008/56/EO

This measure fact sheet is the result of coordination between the UBA project Implementation of the Marine Strategy Framework Directive (MSFD) in Bulgaria – Development of Programmes of Measures under Article 13', carried out by Fresh Thoughts/Intersus, and the EC project (DG Environment) 'Technical and administrative support for the joint implementation of the Marine Strategy Framework Directive (MSFD) in Bulgaria and Romania – Phase 2", carried out by ARCADIS-Belgium.

Measure characteristics	**Management area:** - **Black Sea**	**Code:** **BLKBG ……** **№ of measure: 23**
Measure title	Upgrading the established register for ambient and acute (impulsive) noise following standardised mandatory reporting requirements with aim to became operational tool	
Short, precise description of the measure	The aim of this measure is to upgrade the activities and results of the project "MARine Litter, Eutrophication and Noise assessment tools - MARLEN)" (April 2015-April 2016) for the fulfilment of the requirements of MSFD 2008 / 56 / EC especially related to Descriptor 11 and the Guidance on monitoring of Underwater noise. Below is a short overview of the activities under above-mentioned project: 1. Study of existing methodologies and practices in relation to the development and implementation of programs for monitoring underwater noise under the MSFD. 2. Collection of data on the main sources of anthropogenic noise in the test water area. 3. Description of the characteristics of potential sources of anthropogenic noise. 4. Conducting pilot measurements of the background noise level in areas with high and low intensity of shipping in the survey area by stationary systems hydrophones. 6. Assessment of noise levels and spatial distribution of different types of ships. 7. Modelling background noise using AIS monitoring data, measurements and estimates of levels and spatial distribution of noise from different types of ships in order to create maps of the spatial distribution of noise levels. The two chosen research areas are located in Bulgarian coastal waters. The register will be created and filled with data from these areas. The input of data is only foreseen for the duration of the project. This measure aims to upgrade and expand the lifetime of this noise register by further developing it for the operational purposes of MSFD	

	(D11). The implementation of the measure will fill the gaps in data on underwater noise levels and will support the development of trends for individual noise-generating activities on the marine environment and the use of models to predict noise levels in any accidental situations. The implementation of the measure will support the monitoring program under Descriptor 11 - Underwater noise and energy (planned start in 2017). On the basis of obtaining new information, specific measures will be planned in the second cycle of the MSFD.
EU measure category	*Categorisation of the measure in accordance with the "PoM Recommendations":* **2a**
Key Types of Measures	*KTMs as defined in the „PoM Recommendations". Measures can be categorised in one or multiple KTMs.* **KTM 28 Measures to reduce inputs of energy, including underwater noise, to the marine environment**
Environmental targets	*Categorisation of the measures in accordance with the nationally defined operational environmental objectives.* During the preparation of the Initial assessment of the marine environment (Art. 8), determination of criteria and definitions of good status, environmental targets and indicators for achieving them (Art. 9 and 10) and the preparation of monitoring programs (Art. 11), such targets were not were not developed / revised (Descriptor 11). The reason is the lack of data for marine waters of the Republic of Bulgaria.
Descriptors	*Categorisation of the measures to the descriptors in lined with Annex 1 MSFD. The descriptors are identified by their short form:* **D11 – Energy lines**
Main pressures	*Using the analysis carried out in 2012 as a basis, categorisation of the measures in accordance with the pressures defined in Annex 3 MSFD, Table 2:* - C Other physical disturbance/Underwater noise
Main drivers	*The sectors/activities targeted by the measure* • Setting and operation of temporary and / or permanent platforms offshore for energy production (oil and gas) • Setting and operation of temporary and / or permanent structures offshore (other than for energy production) • Setting and operations of submarine cable and pipeline operations • Shipping

	• Coastal recreation sports
Characteristics	*Using the analysis carried out in 2012 as a basis, categorisation of the measures in accordance with the characteristics defined in the "PoM Recommendations":* - Marine and coastal birds - Marine mammals
Link to other directive/legislation/ policy	Aligning objectives with other legal commitments Convention on Environmental Impact Assessment in a Transboundary Context (ESPOO Convention) Directive 2001/42/EC of the European Parliament and the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment - SEA Directive; Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment. The last one has been amended by Directive 2014/52/EU of the European parliament and of the Council of 16 April 2014 (Environmental Impact Assessment (EIA) Directive). **National legislation:** Environmental protection Law Regulation on the conditions and requirements for environmental assessment of plans and programs, transposed Directive 2001/42/EC (SEA Directive) Regulation on the conditions and the order for implementing environmental impact assessment, transposed Directive 2014/52/EC (EIA Directive)
Necessity for transnational regulation	*Information as regarding the necessity for regulations at EU, regional and international level to achieve MSFD environmental objectives.* No He
Mode of implementation	*Stating the implementation process in line with the „PoM Recommendations"; multiple options possible:* • Technical • Техническа
Implementation zones	*i.e. the spatial impact of the measure: MS land / FW, WFD TW, WFD CW, Territorial waters, EEZ* Coastal (WFD CW), Territorial waters and Exclusive Economic Zone (EEZ) of Republic of Bulgaria
Contribution of the measure to achieving	*– using technical information* Underwater noise can have a significant negative impact on marine

the target	animals and their communities. The initial assessment of the Bulgarian marine waters, published in June 2013, did not include an assessment of the underwater noise and its impacts. At the moment there is no adequate baseline or threshold values. Noise can cause two main adverse effects: gaps in distribution caused by impulsive sounds and communication difficulties, caused by low frequency noise. The registry will enable the development of a baseline and threshold values by helping to identify where and when such sounds occur, and perhaps later to manage their occurrence. By establishing a mechanism to collect and analyse information on the occurrence (or future occurrence) of these sounds, the registry will contribute to D11. The establishment of a registry will help to allow in the future a quantitative measurement of the anthropogenic and marine environment noise, the establishment of trends, basic values and threshold values above that there are negative impacts on marine mammals. This measure will also fulfill the requirements of MSFD for establishment of a register of underwater noise that includes various sources of underwater noise and energy, generated underwater noise and energy. It will also enable the monitoring of D11 and setting environmental targets for achieving Good Environmental Status (GES) on Descriptor 11 in 2018 (revision of Article 10). The collected data will be used for planning of measures to reduce / prevent negative impact on the marine environment in the second cycle of the MSFD.
Transboundary impact	*Information on the impact of the measures on transboundary neighbours* The implementation of the measure is not expected to have negative transboundary impact on the waters of other countries shared the Black sea marine region. The measure is expected to contribute to the initial collecting of data and information on the levels of ambient and impulsive noise.
Costs	*costs for the implementation* Development and implementation of noiseregistry will not lead to significant additional costs as the MARLEN project has been financed by an EEA project. The work package dealing with underwater noise has a budget of …… lv (euro). The implementation of a registry will impose administrative costs on the Bulgarian authorities involved (gathering information, identifying needs for monitoring, maintenance of registry). In addition, medium costs for equipment will incur. **The costs of the measure are estimated to be medium**.
Effectiveness	*Effectiveness of the measure in reaching targets (either qualitative description, or according to indicators: indicators for environmental targets and for GES, proposal for statistical indicators in support of Art. 18 interim reports* Research has shown increases in ambient noise levels in the past 50 years, mostly due to shipping activity. This has the potential to mask

	biological relevant signals (e.g. communication calls in marine mammals and fish), reducing the range over which individuals are able to exchange information. It is also known that marine mammals alter their communication signals in noisy environments. It is further likely that prolonged exposure to increased ambient noise leads to physiological and behavioural stress. Thus, chronic exposure to noise can permanently impair important biological functions and may lead to severe consequences. The register will help to estimate the spatial and temporal impact on the environment (the total period and total habitat loss by impulsive (acute) noise sources) and for determining the baseline level. Once a baseline and targets have been set, the register can be used for management purposes (e.g. regulating planning and licensing activities) and assist in marine spatial planning, incorporating displacement mitigation guidelines and reducing the potential for cumulative impacts.
Indicator(s) to measure effectiveness	*Should be based on existing indicators.* Reduction in: 1) short duration-- loud, low and mid frequency impulsive noise (which includes sonars) (10 Hz to 10 kHz); 2) long lasting-low frequency continuous noise (ambient noise) 11.1.1 Target: To establish a "noise registry" to record, assess, and manage the distribution and timing of anthropogenic sound sources measured over the frequency band 10 Hz to 10 kHz, exceeding the energy source level 183 dB re 1 µPa² m² s; or the zero to peak source level of 224 dB re 1 µPa² m² over the entire area of the Bulgarian marine waters.
Socio-economic assessment	The measure will have a **low effectiveness** in reaching MSFD objectives/environmental targets, as the measure itself will not lead to reduction in underwater noise but will rather identify sources and threshold values for noise. This is an important step for taking future measures to tackle with possible impact from underwater noise. The registry will contribute to the monitoring of underwater noise by enabling data to be gathered. The administrative costs of the measure are **low** (existing staff can set up and maintain the registry), but there will be costs for purchasing equipment. Therefore, the costs for the measure are expected to be **medium**. The cost-effectiveness of the measure, i.e. comparing costs with potential benefits in terms of reaching MSFD objectives, can be described as being of medium level. Unfortunately, no quantitative assessment of the cost-effectiveness could be conducted, as especially the information on the benefits (in a quantified form) is not available.

Coordination level	*Selection of the governance level that will coordinate the implementation of the measures, local, sub-national, national, bilateral, sub-regional, regional, EU-level, international* at local level at national level
Technical feasibility	*Options:* • *Applied; limited experience / uncertainties* • *New development*
Body responsible for the measure implementation	Ministry of Environment and Waters (MoEW), Black Sea Basin Directorate (BSBD)
Financing opportunities	*Including EU-cofinancing* National funding (Environmental Protection Fund) or European financing through project execution under call related to marine environment
Temporal coverage	**2017-2021**
Difficulties in implementation	*Provide information on the potential challenges that could likely faced in implementation.* During the implementation of the measure, it is possible that the competent authorities may face the following difficulties, which could lead to delay or even stop the application of the measure: - lack of funding for the purchase of additional equipment to cover the whole part of the Bulgarian Black Sea marine region. - lack of training of experts from the Institute of Oceanology as a competent body performing monitoring under MFSD, respectively the Regulation for environmental protection of marine waters (NOOSVM), to work with the equipment and data analysis, as well as state institutions responsible for planning of MSFD monitoring (Ministry of Environment and Waters, MoEW and Black sea Basin Directorate, BSBD). - lack of funds to conduct monitoring under Descriptor 11. - when there is available equipment, it is possible to have delay of approving licenses or even rejection by other institutions / Concession contractors for deployment (installation) and regular maintenance of equipment.