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Resource estimation of eighty-two European shale formations

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Abstract

Twenty-one national geological surveys contributed to the European wide project 'EU Unconventional Oil and Gas Assessment' (EUOGA). The goal of EUOGA was to assess all potentially prospective shale formations from the main onshore basins in Europe and included contributions of twenty-one European geological surveys. Each participating geological survey characterized their domestic shale plays using thirty systematic parameters such as areal distribution, structural setting, average net to gross ratio of the shale reservoir, average Total Organic Carbon-content (TOC) and average mineralogical composition. The assessment covers 82 geological formations from 38 basins. Subsequently a stochastic volumetric probability assessment was performed on 49 of these formations which met the prerequisites for assessment. Importantly, this study for the first time used a unified methodology for assessing resources across European borders. Paleozoic plays in Poland, the United Kingdom, Denmark and Ukraine hold the largest potential gas resources. Most shale oil potential is observed in Bulgaria, the United Kingdom and Ukraine. The total resource potential for the geological formations that were evaluated in the project is 89.2 trillion cubic meter of gas initially in place (GIIP P50) and 31.4 billion bbl of oil initially in place (OIIP P50). The outcome of this project represents the most complete and accurate determination of shale hydrocarbon resources in Europe to date.