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Waste-to-Fuel Technology in Albania – How to Implement a Renewable Energy System in Europe's Largest Onshore Oilfield

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Albania has been widely known to have active but challenging drilling operations that demand the most innovative technology to develop, predominantly, medium-heavy oil reservoirs. Although recent efforts have been made by the government to stimulate and expand the largest onshore European oilfield, technical and economical obstacles are prevalent, making it difficult to fully establish reliable and profitable hydrocarbon bearing reservoirs in a down-turn economy; specifically since Albanian oil can be costly to produce and refine. Due to these generalized reasons, many developed countries diversify their energy production in order to avoid strict dependence on crude oil. An emblematic and modern category that is extensively popular in Europe focuses on renewable energy and recycling programs. Although Albania is a relatively “green” country when it pertains to its electricity production (97 % hydropower and 3% fossil fuels), it has yet to develop energy recycling programs that can “salvage for self-sustainability in energy sources”. The past 5 years has seen a conscious revitalization and stimulation in the mentality of green economy in Albania. But, in comparison to the rest of Western Europe that are leading world examples in efficient recycling, it is significantly lagging behind with initial strides just now focusing on aligning national legislations with current EU models. Two crucial reasons that inspired the initiative to investigate new applications for energy recycling in Albania are (1) alternatives to crude oil and petroleum products that can be supplemental and provide stable access to fossil fuels (2) industrial and municipal recycling via waste management to reprocess waste and produce industrial raw material- spawning the emergence of a “circular economy” to develop the backbone needed to strengthen the industrial and manufacturing markets for a self-sustaining economy. Accordingly, in this paper, the topic that will be addressed, given the recent decrease in oil & gas prices, focuses on the Albanian energy sector's capability to sustain and develop a supplementary recycling program via “waste-to-fuel” (WTF) technology (biofuels and/or inorganic waste). With the intent that it could function cooperatively with Albania's active drilling program in order to mitigate dependency on a single fuel source and produce enough fossil fuel in an effective and sustainable manner.

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