

# Digitalization of the fuel and energy industry: a study of new technologies and their potential

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**Abstract.** The article describes technologies that are implemented into the production processes, evaluates digital solutions taking into account the latest trends that will allow fuel and energy companies and the industry as a whole to increase the competitiveness of their products, identifies the problems of digitalization of the fuel and energy industry and suggests possible solutions.

## 1 Introduction

In recent years, the fuel and energy industry has accumulated a large amount of structured data which can provide the industry with new opportunities for the development and efficient use of the existing infrastructure. However, in order to process and use this data in the production process, companies need to implement modern information and digital technologies. The development of new digital technologies and the use of existing ones will allow the fuel and energy companies to improve the competitiveness of products and the industry as a whole.

According to the report of the ranking agencies Deloitte and iR&D Club, in terms of the digital maturity, the ranking of fuel and energy companies (hereinafter referred to as the FE companies) is 2.5 out of five points.

The industry lags behind the banking and trade sectors and the automotive industry (the ranking is based on a survey of the largest companies in the key industries with a turnover of 50 billion rubles a year). [1]

Digital maturity data indicates that new technologies can change the market balance, which can change the strategy of fuel and energy companies, allow for the implementation of new initiatives and create advantages for other economic sectors.

Many industries have been already involved in the technological race for digitalization in all the industries, including the fuel and energy one. For example, in fields with hard-to-recover oil and gas reserves, 3D seismic models and digital twin technology are used in oil refining. New technologies can reduce exploration, production and processing costs, improve production safety and production capacity.

According to some experts, digitalization can speed up the process of seismic data processing. This data is used in making decisions where and how to drill. Due to the data analysis, the field start-up time can be reduced by 30-40%.

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# Potential Fuel Effectiveness In Industry

**E. P. Gyftopoulos, Lazaros J.  
Lazaridis, Thomas F. Widmer**



## Potential Fuel Effectiveness In Industry:

Potential Fuel Effectiveness in Industry E. P. Gyftopoulos, Lazaros J. Lazaridis, Thomas F. Widmer, 1974 Energy Waste and Energy Efficiency in Industrial and Commercial Activities United States. Congress. Senate. Committee on Commerce, 1974 **Energy Conservation in the Process Industries** W. F. Kenney, 2012-12-02 Energy Conservation in the Process Industries provides insight into ways of identifying more important energy efficiency improvements This book demonstrates how the principles can be employed to practical advantage Organized into 12 chapters this book begins with an overview of the energy situation and a background in thermodynamics This text then describes a staged method to improved energy use to understand where the energy goes and how to calculate the value of losses Other chapters consider improving facilities based on an understanding of the overall site energy system This book discusses as well the fundamental process and equipment improvements The final chapter deals with systematic and sophisticated design methods as well as provides some guidelines and checklists for energy conservation items This book is a valuable resource for mechanical lead process and plant engineers involved in energy conservation Process designers plant managers process researchers and accountants will also find this book extremely useful *Energy Waste and Energy Efficiency in Industrial and Commercial Activities, Hearings Before..., 93-2, May 13, 20, June 10, and 13, 1974* United States. Congress. Senate. Committee on Commerce, 1974 *Energy Abstracts for Policy Analysis* , 1978 **Presidential Emergency Program, Hearings Before the Subcommittee on Energy and Power of ..., 94-1, Feb. 17, 18, 20, and 21, 1975** United States. Congress. House. Committee on Interstate and Foreign Commerce, 1975 Energy Conservation Act of 1976 United States. Congress. Senate. Committee on Commerce, 1976 **Powerplant and Industrial Fuel Use Act, annual report** United States. Department of Energy. Office of Fuels Programs, 1980 **Increased Automobile Fuel Efficiency and Synthetic Fuels** , 1982 Powerplant and Industrial Fuel Use Act, Annual Report United States. Department of Energy. Economic Regulatory Administration, 1980 *Medium- and Heavy-Duty Fuel Efficiency Improvement Program* , 2011 **Energy from Biological Processes** , 1980 *Industrial, agriculture, and home energy problems. Transportation. Additional testimony from Government officials* United States. Congress. House. Committee on Ways and Means, 1975 *Activities of the Conference: Documents Approved by the Council of Ministers of Transport in 1996 Forty-Third Annual Report* European Conference of Ministers of Transport, 1997-02-01 This publication describes the activities of the European Conference of Ministers of Transport during 1996 and sets out the documents approved by the Council of Ministers of Transport during that year **Increased automobile fuel efficiency and synthetic fuels** United States. Congress. Office of Technology Assessment, 1982 *Hearings, Reports and Prints of the Senate Committee on Commerce* United States. Congress. Senate. Committee on Commerce, 1974 *Emergency Marine Fisheries Protection Act of 1975* United States. Congress. Senate. Committee on Commerce, 1975 **Presidential Energy Program** United States. Congress. House. Committee on Interstate

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## Whispering the Secrets of Language: An Psychological Quest through **Potential Fuel Effectiveness In Industry**

In a digitally-driven earth where screens reign supreme and quick conversation drowns out the subtleties of language, the profound strategies and mental subtleties concealed within words frequently get unheard. Yet, nestled within the pages of **Potential Fuel Effectiveness In Industry** a captivating fictional treasure sporting with natural feelings, lies an exceptional quest waiting to be undertaken. Published by an experienced wordsmith, this enchanting opus encourages visitors on an introspective journey, softly unraveling the veiled truths and profound impact resonating within ab muscles material of each and every word. Within the mental depths of this moving evaluation, we can embark upon a genuine exploration of the book is primary subjects, dissect its interesting writing type, and fail to the powerful resonance it evokes serious within the recesses of readers hearts.

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