



Subject card

Subject name and code	Markets of Energy, PG_00042083						
Field of study	Power Engineering, Power Engineering						
Date of commencement of studies	October 2023	Academic year of realisation of subject				2025/2026	
Education level	first-cycle studies	Subject group				Obligatory subject group in the field of study Subject group related to scientific research in the field of study	
Mode of study	Full-time studies	Mode of delivery				at the university	
Year of study	3	Language of instruction				English English	
Semester of study	6	ECTS credits				2.0	
Learning profile	general academic profile	Assessment form				assessment	
Conducting unit	Department of Electrical Power Engineering -> Faculty of Electrical and Control Engineering -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Marcin Jaskólski				
	Teachers		dr inż. Wiktoria Stahl				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
	eNauczenie source address: https://enauczenie.pg.edu.pl/2025/course/view.php?id=5352 Moodle ID: 5352 Markets of Energy 2025/2026 https://enauczenie.pg.edu.pl/2025/course/view.php?id=5352						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM		
	Number of study hours	30	5.0	15.0	50		
Subject objectives	The aim of the course is to introduce students to the most important economic issues related to the creation and effective functioning of electricity markets and the challenges associated with the decarbonisation of the energy sector and recent innovations.						
Learning outcomes	Course outcome	Subject outcome	Method of verification				
	[K6_W08] has basic knowledge in the field of intellectual property protection and patent law, knows and understands the basic processes of energy production and use, knows and understands the principles of modern heating and power systems	The student is able to describe the operation of modern power and district heating systems. The student is able to relate their operation to the situation on energy markets.	[SW3] Assessment of knowledge contained in written work and projects				
	[K6_W07] knows the basics of economic calculus in the energy sector; knows the legal, organizational and economic principles of the functioning of energy markets, knows the basic principles of management and running a business	The student knows the types of costs related to the operation of energy facilities. The student is able to analyse electricity consumption and formulate appropriate conclusions. The student is able to explain the principles of electricity market operation.	[SW3] Assessment of knowledge contained in written work and projects				
Subject contents	Course content – lecture Basic informations about the National Power System. Daily characteristics of the demand for electric energy. Centralized energy sources. Electricity production. Renewable energy in Europe and in the world. Tasks and requirements for centralized and regional energy supply systems. Choosing a route and running power grids. Ways of laying networks. The history of the energy market, its current state and prospects. Operators of the distribution network market in Poland. The next day market. Futures contracts.						

Prerequisites and co-requisites	Basic knowledge of physics (basic physical laws, physical quantities, their units and titles, mechanics, electrical engineering, thermodynamics, heat transfer). Knowledge of the properties of energy transformation: the efficiency of transformation and the cycle of transformations and thermodynamic cycles. Basic knowledge in mathematics: algebra, geometry and trigonometry, differential and integral calculus.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Report	60.0%	100.0%
Recommended reading	Basic literature	<p>Energy Markets, W. Mielczarski et. al., Proceedings of Energy Market Conference, 2018</p> <p>The Efficient Use of Energy and Environment, W. Kamrat, M. Jaskolski, PG 2019 (unpublished)</p> <p>Sorknæs, Peter, et al. "Smart Energy Markets-Future electricity, gas and heating markets." Renewable and Sustainable Energy Reviews 119 (2020)</p> <p>Pepermans, Guido. "European energy market liberalization: experiences and challenges." International Journal of Economic Policy Studies 13.1 (2019): 3-26.</p>	
	Supplementary literature	<p>Dilemmas Facing Investors on the Energy Market J. Popczyk, Polish Power Plants 2005, TGPE Warsaw 2005</p> <p>What Does the Electric Energy Industry Community Expect, W. Nikodem, Polish Power Plants 2005, TGPE Warsaw 2005</p> <p>Kowalska-Pyzalska, Anna. "What makes consumers adopt to innovative energy services in the energy market? A review of incentives and barriers." Renewable and Sustainable Energy Reviews 82 (2018)</p>	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<p>Development of energy markets,</p> <p>Modern technologies, efficiency analysis, Outlays and costs, Local markets for heat and gas,</p> <p>Structure of electricity generation,</p> <p>Electricity Demand Management Strategies (DSM/DSR),</p> <p>Balancing the demand and production of electricity,</p> <p>Auxiliary services on the electricity market</p>		
Practical activities within the subject	Not applicable		

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