



Programme

8 - 11 September 2026 | Kaunas ,Lithuania

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Day 1

8 September

Meeting room

116

ground floor

08:00	Registration
09:00	Opening and Welcome Prof. dr. Saulius Gudžius, Lithuanian Energy Institute Prof. dr. Hussam Jouhara, Brunel University of London Dr. Robertas Poškas, Lithuanian Energy Institute
09:30	Welcome Speech TBC, Vice Minister, Ministry of Education, Science, and Sport of the Republic of Lithuania
09:45	Welcome Speech Karolina Štelmokitė, Vice Minister, Ministry of Energy of the Republic of Lithuania
10:00	Keynote Towards EU Fusion Strategy Dr. Darius Ancius, European Commission, DG RTD, C4 Euratom Research <i>Fusion gives Europe a unique chance to power the future with clean, near-limitless energy. With ITER, world-class research, and growing industrial strength, Europe already has the talent and supply chains to lead. Now we must unite bold innovation with strong collaboration across science, industry, and policy – and turn excellence into global industrial leadership.</i>
10:30	Keynote Role of Nuclear Science and Applications in Energy Sector: IAEA's Perspective Dr. Habil. Danas Ridikas, International Atomic Energy Agency <i>Presentation will highlight the role of nuclear science and applications in the energy sector, with emphasis on nuclear energy. Dr. Danas Ridikas will present examples of how research facilities and activities support nuclear data development, materials research, the advancement of new nuclear technologies, solutions for nuclear waste management, modern radiological monitoring, and capacity building for future nuclear energy programmes.</i>
11:00	Coffee Break

11:30	Keynote Protecting the Energy Backbone: Critical Infrastructure Resilience, Nuclear Pathways, and Innovation for Strategic Security Kristina Rimkūnaitė, ENSECCEOE
12:00	Keynote New Nuclear in the Baltic Region – From Vision to Deployment with Proven, Scalable APx Nuclear Technology Kim Dahlbacka, Westinghouse <i>The next phase of the energy transition will be won not by ambition alone, but by the ability to deploy proven solutions at scale. In the Baltic region, where energy security and decarbonization go hand in hand, nuclear energy — when standardized and delivered with modern project approaches — offers a clear pathway forward. Yet the real enabler is collaboration between all the stakeholders in the Baltic region. This is how we move from discussion to delivery.</i>
12:30	Group photo
12:45	Lunch
14:00	Keynote From Decommissioning Excellence to Advanced Nuclear Capability. How Altra's Expertise Supports the Transition to New Nuclear Technologies Dr. Gintautas Klevinskas, ALTRA
14:30	Keynote Competence-based Education of Energy Engineers: from Challenges to Opportunities Prof. dr. Eugenijus Valatka, Kaunas University of Technology <i>Modern nuclear energy education demands competency-based educational model, opening flexible pathways for impactful professional growth of students. It seamlessly align academic engineering education with fast-evolving real-world needs, ensuring students` readiness for digital and technological transformations and turning complex energy sector challenges into powerful engines of progress.</i>
15:00	Keynote From Ambition to Competence: Educating Poland's Future Nuclear Workforce Prof. dr. Agnieszka Korgul, University of Warsaw & Polish Nuclear Society <i>Poland's nuclear power programme (NPP1, NPP2, and the OSGE SMR project) is advancing, but its success will depend as much on people as on technology. Prof. Agnieszka Korgul, President of the Polish Nuclear Society (PTN) and nuclear physicist at the University of Warsaw, will present how Polish universities and professional societies are building the competencies needed for this generational undertaking. Drawing on concrete workforce benchmarks from IAEA and NEA/OECD studies, she will outline how academic programmes and industry partnerships including with Westinghouse, PEJ, and OSGE are shaping Poland's nuclear talent pipeline. She will also share PTN's own role as a 35-year-old scientific society uniting engineers, students, and specialists across the sector in sustaining this effort for decades to come.</i>
15:30	Coffee Break
16:00	Panel discussion Energy Tomorrow: Strategic Choices for Europe and Role of Lithuania <i>Panelists</i> • TBC Ministry of Energy of the Republic of Lithuania • Dr. Darius Ancius, European Commission, DG RTD, C4 Euratom Research • Kim Dahlbacka, Westinghouse

- Prof. dr. Eugenijus Valatka, Kaunas University of Technology
- Prof. dr. Agnieszka Korgul, University of Warsaw & Polish Nuclear Society
- Dr. Gintautas Klevinskas, ALTRA
- Giedrius Dapkevičius, Orlen Lietuva
- Prof. dr. Saulius Gudžius, Lithuanian Energy Institute

Moderator

Goda Raibytė-Aleksa

17:30 Wine and cheese

Day 2

9 September

	Meeting room 116 ground floor	Meeting room 202 first floor
09:00	Introduction to Day 2	9:00 - 16:00
09:10	Keynote Southeast European Power Systems at a Crossroads: From Market Evolution to System Integration Dr. Dražen Balić, Energy Institute Hrvoje Požar <i>The energy transition is reshaping power systems faster than ever before. The presentation explores how Southeast European electricity market is evolving under the influence of renewable integration, increasing price volatility, changing adequacy requirements and new flexibility solutions. Combining market trends with practical experience from regional studies, it will offer insights into battery storage deployment, future generation portfolios, data centres, and the challenges of building resilient power systems for the decades ahead.</i>	Project MFMET II Meeting. <i>Participation is by prior registration only</i>
09:40	Keynote The Energy Transition Has a Blind Spot Prof. dr. Ivo Palu, TalTech <i>Energy transformation is usually discussed through generation, storage, markets and policy — but one of its most critical safety layers remains hidden inside buildings. This keynote explores how changing electricity use, ageing electrical installations, degraded contacts and invisible thermal stress can become reliability, fire-safety and social welfare risks before they are noticed by conventional protection or monitoring systems.</i>	
10:10	Keynote Industrial Transformation Through Electrification: From Energy Consumer to Energy System Partner Giedrius Dapkevičius, Orlen Lietuva <i>Industrial transformation is already underway, with electrification becoming one of its main drivers. Growing energy demand, decarbonization targets, technological progress, and energy security challenges are reshaping the traditional role of industry — from a passive energy consumer to an active participant in the energy system, integrating renewable energy, flexibility, and new technologies. Today's key challenges include competitive energy prices, infrastructure development, and investment uncertainty. At the same time, electrification creates new opportunities to improve efficiency, reduce dependence on fossil fuels, and strengthen industrial competitiveness. Electrified industry is not only more sustainable but also more resilient to geopolitical and energy security challenges.</i>	
10:40	Coffee Break	
11:00	Keynote Electricity as Europe's New Competitive Advantage: Powering the Next Economy	9:00 - 16:00

	Anu Esclas, Ignitis Group <i>For years, the discussion focused on how to produce more renewable electricity. Today, the bigger challenge is how to create value from that electricity. From Ignitis' perspective, the future of the Baltic energy system depends on three interconnected pillars: accelerating renewable generation and flexibility, creating new sources of electricity demand - from electrification to AI and data centres - and designing market frameworks that give investors the confidence to deploy capital at scale. The winners of the next decade will not simply generate green electricity; they will build the ecosystems that allow clean energy to power sustainable economic growth.</i>				Project MFMET II Meeting. Participation is by prior registration only
11:30	Keynote District Heating and Future Energy Dr. Valdas Lukoševičius, Lithuanian District Heating Association <i>Utilisation of waste and ambient heat flows for building heating and cooling, balancing and reserve services for electricity network, production of green hydrogen and other products create new opportunities and new challenges for district heating systems. Across Central and Northern Europe, district heating systems are being modernized and integrated, creating stronger synergies between the energy sectors and urban needs. This transition requires new technologies, adequate regulation and effective incentives for investors.</i>				
12:00	Lunch				
	Meeting room 116 ground floor	Meeting room 301 second floor	Meeting room 304 second floor	Meeting room 330 second floor	Meeting room 202 first floor
13:00	<i>Panel discussion</i> Smart metering and energy monitoring in power systems - innovations and research directions <i>Panelists</i>	The Clean Energy Transition: New EU Developments Prof. dr. Jurgita Malinauskaitė	Modelling of Design Basis Accidents and Severe Accidents in LW-SMR Dr. Algirdas Kaliatka	Iron ore roasting process in Indirect-Fired Rotary Kiln: a modelling approach Alina Žabnieńska-Góra	9:00 - 16:00 Project MFMET II Meeting. Participation is by

13:15	• Titas Petkus, AB „ESO“ • Nerijus Kruopis, UAB „Elgama Elektronika“ • Piotr Kuwalek, Poznan university of technology • Povilas Komarovskis, Schneider electric • Tomas Mikolaitis, UAB Teltonika- Networks • Mantvydas Vaičius UAB Teltonika- Networks <i>Moderator:</i>	Policy Framework for Sustainable Business Management: Strategies for Long-Term Organizational Success PhD Student Md Mominur Rahman	Numerical Analysis of Fuel Rod Behavior During Reactivity-Initiated Accidents Student Dominykas Šileikis	Energy production from waste landfill gas via CHP gas plant under oxygen-enrichment Dr. Rolandas Paulauskas	prior registration only
13:30	• Žilvinas Nakutis, KTU <i>This panel will explore the current state and future direction of smart metering, highlighting deployment progress, key industry developments, and ongoing research initiatives. Experts will discuss how emerging technologies such as AI, IoT, and advanced communications are transforming metering systems and enabling more efficient, flexible energy management. Panelists representing smart meters manufacturers (Elgama-Elektronika), national utility (ESO), energy management solutions provider (Schneider Electric), communication infrastructure developers (Teltonika Networks), research institutions (KTU, LEI, Poznan University of Technology) will share perspectives on evolving business models, technology solutions, and interoperability across ecosystems. The discussion will consider how smart metering can deliver value to stakeholders, from utilities and manufacturers to consumers and smart cities. Attendees will gain insights into both current realities and future opportunities shaping the smart metering and energy monitoring landscape.</i>	Multimodal Transport in the EU Decarbonization Strategy: Economic and Strategic Dimensions PhD Student Domantas Lapėnas	A PRISMA-Based Review of RELAP5 Application for Numerical Modeling of Natural Circulation Phenomena PhD Student Samina Javed	Creation of plasma-activated water and its effect on Chlorella vulgaris microalgae treatment Prof. Liutauras Marcinauskas	
13:45		Behavioral economics and the governance of sustainable transitions PhD Student Gediminas Naujokas	Evaluation of a fully open source Monte Carlo workflow for neutronics analysis of the IFMIF-DONES Test Cell PhD Student Dilmurod Tuymurodov	Nonthermal plasma induced stabilization and thermal radiation enhancement of ammonia combustion with CO₂ injection PhD Student Ignas Ambrazevičius	
14:00		Multi-Dimensional Correlation-Based Regionality Assessment of the Baltic Electricity Market PhD Student Akvilė Grigaliūnienė	Structural integrity of reactor building floor analysis in case of heavy steam drum separator fall PhD Student Emilija Stankutė	Structural Indicators of Renewable Energy Production and Carbon Capture in Hybrid Populus Clones PhD Student Yanal Alkuddsi	
14:15		Economic Effects of Circular Economy Implementation Mechanisms: Evidence from the Textile Sector	Validation of Updated flameFoam CFD Combustion Library in Low and High Turbulence Conditions	Operating Principles and Industrial Applications of Heat Pipe Heat Exchangers	

		PhD Student Agnė Vičkačkaitė	PhD Student Julius Venckus	PhD Student Donatas Bartkus	
14:30	Coffee Break				
					9:00 - 16:00 Project MFMET II Meeting. <i>Participation is by prior registration only</i>
14:45	Concept of Climate Security as Component of Climate Policy Researcher Oleksii Epik	Energy Poverty and Social Welfare Risks in the Context of Decarbonization: Evidence from Lithuania and the European Union PhD Student Žilvinas Drabavičius	Impact of Solar-Hydrolytic Ageing on Polyethylene Terephthalate: Crystallization Dynamics and Thermal Kinetics Dr. Khaled ALJOUCAA	Deep Saline Aquifers in Development of Scalable Underground Hydrogen Storage Infrastructure PhD Student Leo Jansons	
15:00	Experimental Testing of An Event-driven Technique for Smart Energy Meters Accuracy In-service Surveillance PhD Student Julius Šaltanis	Assessing Energy Sufficiency: Implications for the Lithuanian Economy PhD Student Rimantė Balsiūnaitė	Eu³⁺ Concentration-Dependent Energy Transfer, Colour-Tunable Luminescence, and Structural Evolution in Hydrothermally Synthesized GdPO₄:Tb³⁺/Eu³⁺ Nanophosphors Student Mirza Abdul Qudoos	Comparative Energy Performance Analysis of an Air-to-Water Heat Pump Using R32, R290, and R454C Refrigerants PhD Student Artūras Banuškevičius	
15:15	Unlocking thermal flexibility through demand-side response: baseline methodology assessment and heating electrification in the Baltic region PhD Student Deividas Šikšnys	From technology success to financial saturation: Revisiting Hirth's renewable energy value decline through a biomass district heating system PhD Student Darius Karaša	Catalytic Methane Pyrolysis for Clean Hydrogen Production and Solid Carbon Valorisation Dr. Marius Urbonavičius	Experimental Investigation of the Transient Evaporation of a Water Droplet in Airflow and Generalization of Results for the Phase Change Regime Cycle	

				Dr. Kristina Biknienė
15:30	Coordinated Damping of Low-Frequency Electromechanical Oscillations in Power Systems with Renewable and Synchronous Generation: A Literature Review PhD Student Evaldas Birbilas	A study of the design algorithm for a detached house and the impact of unregulated architectural solutions on the energy consumption of a single-family house PhD Student Rimvydas Adomaitis	SYNTHESIS AND CHARACTERIZATION OF Ni-Cu/MgO CATALYST FOR CLEAN H₂ PRODUCTION VIA METHANE PYROLYSIS PhD Student Vishnu Radhakrishnan Nair	Modeling Energy Efficiency and Decarbonization in the Industrial Sector Dr. Egidijus Norvaiša
15:45	SOC-Aware BESS-Based Virtual Transmission for Renewable Congestion Management in a Transmission Test System PhD Student Eivinas Mikulionis		Effects of Textured and Hydrophobic Coatings on Microbiological Fouling and Hydrodynamic Resistance PhD Student Ainė Antanavičė	Control of Lithuanian Energy Instituteden frost Behavior on Plasma Sprayed Al₂O₃-TiO₂ Coatings Functionalized with Stearic Acid (SA) and Octadecyltrichlorosilane (OTS) on Copper and Steel Surfaces PhD Student Ala Gassim Elhag Elshakh Mohamed
16:00	Dynamic Power Limits for Grid-Supportive Renewable Energy Communities PhD Student Akvile Giedraityte			Energy Consumption Forecasting and Sustainability Implications for Cryptocurrency: An Artificial Intelligence Approach Student Žydrūnas Bautronis
16:15				

16:30 | Departure by bus to sightseeing tour

17:00 | **Sightseeing tour in Kaunas city: Discover the City's Modernist Heritage**

A walking tour of Kaunas New Town

Participation with registration only, registration available at the information desk

After the tour - transfer by bus to conference dinner

19:00 | **Conference dinner**

„Volfas Engelman“ studio, Kaunakiemio str. 2, Kaunas, 4th floor

Participation with registration only, registration available at the information desk

Day 3

10 September

Meeting room
116
ground floor

09:00	Introduction to Day 3
09:10	Keynote Advances in Microfluidic Measurement Technologies Dr. Elsa Batista, Portuguese Institute for Quality <i>Advances in microfluidic measurement technologies have significantly improved energy efficiency by reducing sample volumes and minimizing the power required for fluid manipulation. Modern systems integrate low-power sensors and optimized channel designs that enhance measurement precision while lowering overall energy consumption. These energy-efficient microfluidic platforms are particularly valuable in portable diagnostics and remote monitoring, where conserving power is essential for sustained operation.</i>
09:40	Keynote Advancing Maritime Decarbonization: A Comprehensive Analysis of Solvent-Based Carbon Capture and Storage Systems for Ships Prof. dr. Selma Ergin, Istanbul Technical University <i>The energy transition faces major challenges such as reducing dependence on fossil fuels while maintaining affordable and reliable energy, securing investment for clean infrastructure, and developing technologies for hard-to-decarbonize industries. At the same time, it offers important opportunities through renewable energy growth, technological innovation, cleaner air, and the creation of new jobs and industries. Open dialogue between science, policymakers, businesses, and innovators is essential because effective solutions require both scientific knowledge and practical implementation. Collaboration helps create realistic policies, accelerate innovation, and ensure that the transition is sustainable, economically viable, and socially fair.</i>

Meeting room
116
ground floor

10:10	Keynote: Hydrogen in the Energy Transition: Hero or Villain? Dr. Alf Martinez-Felipe, University of Aberdeen
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Meeting room
202
first floor

10:00 - 12:30
Project MFMET II Meeting.

The energy transition is probably the biggest opportunity and challenge that we face as a civilisation. It is deadly urgent but at the same time its perception by society (and politicians) can be easily distorted by other socio-economic and geopolitical events, delaying its implementation. This is why education and demonstration are key to make sure that governments work closely with the private sector and innovators to deploy solutions that satisfy the so-called energy quadrilemma: energy security, environmental sustainability, economic viability, social justice.

Participation is by prior registration only

10:40 Coffee Break

Meeting room
301
second floor

Meeting room
304
second floor

Meeting room
330
second floor

Meeting room
202
first floor

11:00	Risk Assessment And Flood Inundation Analysis Of A Navigation Lock Gate Failure At Kaunas Hydropower Plant Dr. Egidijus Kasiulis	Evaluating the Potential of Coconut Water as an Alternative Cooling Medium for PV/PVT Systems: Systematic Evidence and Monte Carlo Prediction Prof. Aditya Rio Prabowo	Quantitative Optimisation of the GCC Green Hydrogen Supply Chain Valentina Olabi	10:00 - 12:30 Project MFMET II Meeting. <i>Participation is by prior registration only</i>
11:15	Impact of 4 Genetically Homologous Paenibacillus sp. Ecotypes on the Biochemical Profile and Growth Development of Populus tremula In Vitro Student Asma Elayoubi	Circular Forest Resource Use in Lithuania: From Biomass to Wood Ash Recycling Dr. Iveta Varnagiryte-Kabašinskiene	Green Hydrogen in Kuwait: Integrated Simulation and Multi-Site Optimisation Abdulrahman Alhajer	
11:30	Integrated Thermal-Structural Perspectives on Marine PV/T Systems: A Systematic Review and Meta-Analytical Assessment for Offshore Energy Applications Prof. Aditya Rio Prabowo	Recovery of Energy Resources from Landfills: Feasibility Assessment Model and Its Testing under Lithuanian Conditions Prof. Gintaras Denafas	Energy performance assessment of building retrofit heat pumps in apartments Bertrand Delpech	

11:45	Environmental Flow Quantification Strategies for Mitigating Hydropower-Induced Hydrological Alteration under Climate Change PhD Student Karolina Gurjazkaitė	Life Cycle Assessment of Supermarket Waste Heat Recovery, Processing and Integration into District Heating Networks in Cold-Climate Regions PhD Student Abu Muhammad Mustakim Reza	An Investigation of Cascade Heat Pump Systems for Domestic Heating Bertrand Delpech	
12:00	Comparative Evaluations of Long-Term Land Cover Datasets for Basin-Scale Assessment in Eastern Baltic Transboundary River Basins PhD Student Kibrewosen Zewdu Belay	Hazelnut shell pHazelnut shell pyrolysis process optimization via tar cracking using ZSM-5 catalyst Student Vilmantė Kudelytė	Risk-Informed Stochastic Optimization for Safe Energy Storage Integration in Smart-City Electricity-Transport Energy Hubs PhD Student Muhammad Shahzad Aziz	
12:15	Water Management in Addressing Sedimentation Challenges in United States Water Reservoirs for Sustainable Water Management PhD Student Augustinas Žilys	Modeling of Renewable Energy Solutions for Wastewater Treatment Plant PhD Student Ralfas Lukoševičius	Data-Driven Evaluation of Heating System Efficiency in Residential Buildings Based on Supply, Return, Flow and Energy Consumption Measurements PhD Student Andrius Timofejevas	
12:30		Modelling of radionuclide migration through the vadose zone under the influence of high-pH cement leachate PhD Student Povilas Balčius	Heating Network Failure Simulation for Resilience Analysis PhD Student Karolis Lašas	
12:45	Lunch			
13:45	Establishing Metrological Standards for Quality Control and Validation of Microfluidic Devices: Focus on WP3 of the 24NRM03 MFMET II project Dr. Oliver Bükér		Heating Network Failure Simulation for Resilience Analysis PhD Student Karolis Lašas	

14:00	Advancing ease-of-use through predictable flow behaviour: Development of characterisation of hydrodynamic resistance in microfluidics Dr. Thomas Schröder Daugbjerg	Analysis of the Development of Lithuania's District Heating System in the Context of Climate Change MSc Irma Petrusėvičienė
14:15	Development of a traceable, integrated setup for MFMET II to test microfluidic devices and act as a transfer standard Kevin Romieu	Assessing the Cannibalization Effect of Wind and Solar in Lithuania's Electricity Market Intern Julien Raudin
14:30	Experimental and Numerical Assessment of Microplastic Transport Through Buckwheat Root-Inspired Microfluidic Networks Student Aistė Tilvikaitė	Machine Learning-Based Decision Support Framework for Underground Hydrogen Storage in Porous Geological Formations Student Mazen Saleh
14:45	Numerical modelling of the local heat transfer in helically coiled tubes under experimental conditions Specialist Renoldas Zujus	Probabilistic Machine Learning for Uncertainty-Aware Virtual Metrology and Safety Assessment in Hydrogen-Ready Gas Networks PhD Student Javid Karimov
15:00	Comparison of 1D and 3D Modeling for Hydrogen Flow in a Pipe Bend System Student Ignas Alcauskas	
11:00	Coffee Break and Posters' Session Electrochemical Alcohol Oxidation using Transition Metal Oxides PhD Student Raminta Šakickaitė Selection of operating characteristics of a plasma device for thermal treatment of silica-containing materials Dr. Viktorija Grigaitienė Acoustic Agglomeration of Fine Particulate Matter: A Comprehensive Literature Review PhD Student Abdul Khaliq Khan Intercropping Medicago sativa (Alfalfa) and Brassica napus L.(Oilseed rape) to enhance the phytoremediation of cadmium contamination of soil PhD Student Saba Fatima Comparative sensitivity analysis of deep learning AHU forecasting models to sensor noise, forecast horizon, and window length	

	PhD Student Dalia Ali • Oil Shale Processing Waste as a Binding Material Dr. Regina Kalpokaitė-Dičkuvienė • Physical and Chemical Properties of the Fine Fraction of Forest Wood Chips PhD Student Gytis Ežerinskas • Conversion of Mixed Plastic Packaging Waste into Carbon Black and Hydrogen via Two-Stage Pyrolysis–Plasma Reforming PhD Student Ieva Kiminaitė • ZnO Nanoparticle-Assisted Cadmium Phytoremediation by Brassica juncea: Effects on Soil Conditions and Plant Growth PhD Student Inesa Sinkevičiūtė • Phosphoric Acid Effect on Mugwort Based Biochar Chemical Composition Student Medeina Mačiukėnaitė • Chemical and Microstructural Assessment of Landfill and MSWI Ashes for Potential Use in Construction Materials Dr. Rita Kriūkienė • Hydrogenation Characteristics of Plasma Sprayed Magnesium-Nickel Coatings on Alumina Granules PhD Student Zulfiqar Khalil • Multidimensional GDP–CO₂ Convergence in the European Union PhD Student Ieva Mičiulienė • Analysis of carbonate systems in geological environments using iCP integrated modelling for engineered barriers of radioactive waste repository Student Agne Anusauskaite • Experimental Study of Lithuanian Energy Instituteden frost Onset on PHMS-Coated Steel Surfaces in Fresh and Salt Water Dr. Monika Maziukienė • Artemisia vulgaris-derived carbon-supported heterogeneous catalysts for sustainable alternative fuel synthesis PhD Student Bohdan Chumak • Digestate Quality and Nutrient Recovery Potential in Lithuanian Biogas Plants Dr. Jurgita Ceseviciene
16:00	Best Speaker Awards
16:30	Departure by bus to sightseeing tour
17:30	Sightseeing tour at Lithuanian Ethnographic Museum in Rumšiškės <i>A walking tour at Rumšiškės</i> Participation with registration only, registration available at the information desk
19:00	Return to Kaunas

Day 4

11 September

10:00	Tour to laboratories of the Lithuanian Energy Institute Participation with registration only, registration available at the information desk
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12:00	
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13:00-15:00	Barbecue
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