Increased renewable energy penetration lithuania

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Since gaining independence from the Soviet Union in 1990, Lithuania has made steady progress toward economic growth and energy independence. The country"s current rate of imported electricity is 55%, with electricity demand at 2.1 GW peak and 12.6 TWh annually. Lithuania closed the Ignalina Nuclear Power Plant in 2009 and currently operates synchronously with the Russia-Belarus power system, though a de-synch is planned in early 2025.

Results from this study will help the Lithuanian Energy Agency understand and plan for issues related to feasibility, reliability, public health, and equitable local economic development. It will also empower Lithuania to harness domestic energy resources and accelerate its journey to energy independence.

This agreement spans 4 years, from 2023 to 2027, but most of the study will be completed and published by the end of the second year. The remaining 2 years will leverage direct support from technical experts at NREL to drive capacity building, training, and implementation. The following scoping questions will be kept in mind throughout the study:

Renewables are an increasingly important source of energy as countries seek to reduce their CO2 emissions and dependence on imported fossil fuels. Renewables are mainly used to generate electricity, though renewable technologies can also be used for heating in homes and buildings. Renewable biofuels are also an emerging technology solution to decarbonise parts of the transport sector.

Note thatmodern renewablesexcludes traditional uses of biomass, such as burning collected wood, agricultural byproducts or dung for cooking or heating. This has serious negative consequences on health and the environment, including contributing to millions of deaths annually from air pollution, and is targeted for phase-out in international development and climate goals and in the IEA"s Net Zero scenario.

Biofuels, mostly made from plants, and waste products, such as household trash and industrial wastes, can be burned to generate electricity or heat. This can have environmental and climate advantages compared to burning fossil fuels, though the impact varies widely depending on the fuel source and how it is used. Traditional uses of biomass for heating and cooking, which remain a major source of energy in many developing countries, are targeted for phase-out in international climate goals and IEA scenarios.

Biofuels are used in all parts of the energy system: as replacement for oil-based fuels in transportation, to generate electricity, for heating buildings, or to provide heat for industrial processes.

Renewables such as solar panels, wind turbines and hydroelectric dams generate electricity without burning fuels that emit greenhouse gases and other pollutants. As the costs of solar panels and wind turbines have

fallen dramatically in recent years, renewables now represent the cheapest source of new electricity generation in many parts of the world.

Renewable heat sources have made fewer inroads in industry, as many important industrial processes such as steelmaking require higher heat than renewable fuels can achieve. New techniques and technologies will be needed to decarbonise these areas.

This first review of Lithuania"s energy policies by the International Energy Agency (IEA) comes at a momentous time for the country"s energy sector, which is undergoing significant reforms and witnessing greater regional integration within the Baltic and European Union (EU) energy markets.

The review was conducted in the context of Lithuania"s process of accession to the IEA. Lithuania"s energy policy aligns sustainability goals with the objectives of boosting energy security, competitiveness and technology innovation. As such, the country"s energy policies are broadly aligned with the IEA Shared Goals (see Annex D).

Since Lithuania regained its independence in 1990, its energy policy has continuously emphasised energy security. The 2012 National Energy Independence Strategy, which was updated in 2018, reflects these fundamental goals. Lithuania is commended for its ambitious 2050 targets for emissions reductions, renewables and energy efficiency under the strategy. Lithuania supports the EU climate neutrality goal and is starting to place a greater emphasis on the mitigation of climate change, while boosting economic growth and technology innovation.