State Hungary

General information	**Status EU membership**	Member state since 1 May 2004[1] Participant of Energy Community since Nov. 2007[2]
	Population	9,709,886 (2021)[3]
	Land area (km²)	91,260 km² (2020)[4]
	Urban population (%)	72 % (2021)[5]
Socio-economic situation	**GDP (current US$ billion)**	182.28 (2021)[6]
	GDP per capita (EURO)	14,010 (provisional, 2020)[7]
	Annual net earnings (Single person without children earning 100% of average earning (EURO)	9,488.13 (2020)[8]
	Median hourly earnings (EURO)	Males: 4.52 (2020) Females: 4.24 (2018)[9]
	World Bank economic classification (2021)	High-income country[10]
	Unemployment (% of total labor force)	4.3 % (2020)[11]

Energy situation in general	**Current energy sources**	• In 2020, 68% of Hungary's energy supply came from Fossil Fuels, composed of: 33% natural gas, 27% oil and 7% coal.
		• Nuclear energy is the main non-fossil energy source (16% of total supply), bioenergy and waste (10%); electricity imports (4%); other renewables - hydro, wind, geothermal and solar (2%).[12]
		• Electricity generation in 2020 consisted of[13]:
		  ○ Non-renewable 29 401 GWh (84%)
		  ○ Renewable 5 529 GWh (16%), of which:
		  • Hydro: 244 GWh (1%)
		  • Solar 2 459: GWh (7%)
		  • Wind: 655 GWh (2%)
		  • Bioenergy: 2 155 GWh (6%)
		  • Geothermal: 16 GWh
		*An Overview of Hungary's energy system by fuel and sector is available in the International Energy Agency Hungary 2022 Energy Policy Review 2020.[14]

	Climate protection targets	The National Energy and Climate Plan (NECP) and the National Energy Strategy (NES) 2030 set the following targets[15]: • reduce emissions by 40% in 2030 compared to 1990 levels • cap total final consumption at 785 PJ (2005 levels) by 2030 • reduce non-ETS (Emissions Trading Scheme) GHG emissions by 7% by 2030 compared to 2005 levels. • produce 90% of domestic electricity from carbon-neutral sources, phasing out coal Hungary adopted a low GHG emissions "National Clean Development Strategy" (NCDS) in May 2021 to achieve net-zero emissions by 2050.[16]

Renewable energy targets	Hungary's targets are mainly driven by obligations under the EU's Renewable Energy Directive (RED) for the period to 2020 and by RED II through the NECP for the period to 2030[17]. The National Energy and Climate Plan (NECP) and the National Energy Strategy (NES) 2030 set the following targets[18]: • install 6.5 GW of solar PV capacity by 2030 and 12 GW by 2040 • install at least 200 000 household roof-top solar panels (average output of 4 kilowatts [kW]) • renewables to account for at least 21% of gross final energy consumption • source final energy consumption above 2005 levels from carbon-neutral sources in 2030. Renewable energy strategies do not include wind power in the future electricity generation mix beyond the existing capacities.[19]
Renewable energy potential	• Experts estimated the technical potential for installation of solar photovoltaic power in the country could amount to over 7 GW[20]. • Large potential for scaling up renewable energy remains, for instance in geothermal energy or wind power.[21] • The potential for geothermal energy is estimated at 30-65 PJ/year.[22] • The potential for deep geothermal to contribute to district heating is estimated to be between 30 PJ and 65 PJ per year, notable considering the current use of about 9.3 PJ per year.[23] The distribution of Solar and Wind and Biomass potential are visualized in the IRENA Country Profile Hungary.[24]
Renewable energy support regime	Renewable energy support scheme (METÁR), 2017[25] • Feed-in tariff available for small-scale renewable installations (50-500 kW) • "Green premium" granted for small- to medium- (0.3-1 MW) and large-scale renewable power plants (1-20 MW) through tendering. • All renewable technologies are eligible under the support scheme (solar energy, geothermal energy, biogas, hydropower, biomass, wind energy) A "brown premium" support scheme for solid biomass and biogas plants, which are no longer eligible for the feed-in tariff or the green premium, to ensure their continued operation.[26] In 2021 a coordinated grid connection capacity allocation introduced to facilitate renewable electricity generation to be fed into the grid.[27] Hungarian Ministry for Innovation and Technology launched a series of tenders to support investments in clean energy solutions and transition to a carbon-neutral economy. A national tender was published in 2020, aiming to create more pilot energy communities[28].

Legal and political framework for citizen energy

Relevant laws, policies, and plans

- Climate and Nature Protection Action Plan - E-AUTO-2021
- Renewable Energy Support Scheme (METAR) - 2017
- 2050 climate neutrality law – 2020
- Climate and Nature Protection Action Plan

Regulatory framework for citizen energy

- Potential support for the energy community first appeared in government strategies already in the mid-2000s via the Ministry of National Development: Energy and Climate Awareness Raising Plan.[29]
- The draft Hungarian Operational Programmes (OPs) include Renewable Energy Communities, and will provide financial support for the installation of community-owned renewable energy projects and lay the foundation of new communities[30]
- "Energy community" as a legal opportunity was transposed to Hungarian legislation in December 2020.
- A law implemented in January 2021, providing the framework for prosumers, flexible pricing, aggregators and (renewable) energy communities. The law defines a renewable energy community as an energy community that produces, consumes, stores or sells electricity from a renewable energy source.[31]
- A three-step community integration was included into the Hungarian National Energy and Climate Plan to support the goals of climate neutrality by the end 2050.[32]

Evaluation of the legal framework

- Legislation still under development; Administrative, legal, social, financial and technical challenges. Legislation hindering innovative financing schemes [33]
- Potential of energy communities as major actors in the energy transition is not acknowledged, insufficient funding is allocated to support citizen energy[34]
- Lack of limitations for for-profit corporate interference

*An updated assessment is available at the REScoop Transposition Tracker[35].

Existing citizen energy projects and/or research initiatives

Citizen energy projects

Kazán Community Center solar rooftop project - The 36 kWp solar rooftop was installed at a communally operated community centre, with the aim to set up a community energy fund from the solar revenues to finance energy efficiency improvements in the building. The Kazán Community Center, located in the 8th district in Budapest, hosts a dozen social initiatives: NGOs, a communal kindergarten, a boxing club, etc. The energy community organizational structure has been set up, but the community does not aim to be formally registered at the moment.[36]

Community-energy support programme of FoE Hungary from 2013.[37]

The Community Energy Service Company (CESCO) project is the only **NGO-led project** funded by the Hungarian government as a pilot. The project aims to set up 6-7 community solar projects across the country, mostly on the rooftops of municipal-owned cultural and educational institutions. Led by FoE Hungary, with the aim to set up CESCO to be registered as an energy community.[38]

Municipal-lead projects include rooftop solar investments on municipal buildings, funded by EU grants in villages and small towns, in some cases, coupled with other energy developments. The **brownfield PV park in the city of Miskolc** provides electricity for 7 municipal institutions. The **Pornóapáti biomass heating plant**, established in 2003, is an example of a municipal renewable heat project.[39]

		Energiahatékony Wekerle (Energy Efficient Wekerle) group.[40] • promotes building energy efficiency at the suburban Budapest neighbourhood Wekerle. • completed window insulation projects in at least 30-40, promotes community planning and offers free heat camera lending[41] Municipality of the 7th District, Budapest aims at creating an energy community in which rooftop solar panels would provide electricity to the community's members. As part of the pilot projects also legal barriers would be analysed.
	Research and capacity building activities	With the **CO-POWER project**, public campaigns will be organized in 5 Hungarian regions to facilitate the birth of much more community energy initiatives and projects[42]. Interreg project: **Collaboration between public bodies and citizen energy groups in implementing local energy strategies in Central Europe**, Period: 2014-2020[43] **Bringing Germany's Bürgerenergie to New Regions in Europe** - aims to ensure implementation of the European Clean Energy Package's new provisions in support of community energy, promote public renewable energy initiatives in Hungary and Spain.[44] As part of the project, a handbook "Community Energy – A practical guide to reclaiming Power" was published.[45] An **exchange event** took place in Budapest, Hungary in 2019 to highlight the growing importance of community energy and to make this approach more prominent in the CEE region.[46]
Relevant actors and stakeholders	**NGOs**	Friends of the Earth Hungary
		Energiaklub[47]
		Environmental Management and Law Association (EMLA)[48]
		Autonómia, Badur, Igazgyöngy – promoted communal production of bio-briquette in 2000s
	Governmental bodies	Ministry of Innovation and Technology
		Hungarian Energy and Utilities Regulatory Authority (HEA),
		Ministry of Interior
	Local governments	Municipality of the 7th District, Budapest
	Private actors	Dutch-based solar project developer Photon Energy.[49]
		PV-Invest Magyarország
		ALTEO Energiaszolgáltató Nyrt.[50]
		PV companies: Danubia, Dél-Nyugat, PV Napenergia
		Energy, IT hardware and software companies: Elektroprofi, Delta Systems, ON-Energy, Reliable Energy
	International / supra-national actors	-

	Academia	Pannon University; Centre for Energy Research;
	Others	Energiahatékony Wekerle (Energy Efficient Wekerle) group[51]
		Kazán Community Centre[52]
		Solidarity Economy Center (SEC)
		The Association of Hungarian Conservationists (MTVSZ)[53]

Summarizing evaluation

Fields of Action

Legal and administrative

- Conducting an official assessment of energy communities as a basis for creating a suitable legal and policy framework, followed by independent assessment reports;
- Revision of the transposition following the guidelines of the European Directives[54] to expand the renewable energy capabilities of communities, limit corporate takeover, providing legal basis for participation of non-profit civic organizations, formation of energy cooperatives;
- Providing easier administration and advantageous taxation /other financial incentives for collective prosumption;
- Advocacy for better legislation the accurate implementation of CEC and REC according to the RED II guidelines and for an easier permitting process, for monitoring and reporting, for collective prosumer solutions;
- Direct legal and administrative support to prospective energy communities.
- Implementing specific legal provisions for metering, settlement, and accountability of collective prosumption;
- Designing business and operational models for collective prosumption;
- Investment in grid infrastructures and facilitating innovations for self-sufficient collective energy solutions.

Financial

- Establishment of targeted loan structures for energy communities paired with a partial self-finance structure (debt to equity);
- Removing legal hindrances from the way of crowd investments;
- Introducing suitable financing instruments for energy communities, such as separate auctions by METÁR and grant schemes suitable for citizen initiatives;
- Providing direct support in administration, financial planning and loan negotiations to prospective energy communities.

Socioeconomic

- Targeting groups living in energy poverty with the legal framework, awareness-raising and capacity-building activities;
- Building an organization equipped with knowledge and skills in consulting prospective energy communities, which can provide them with legal, administrative, and financial support;
- Providing support services to municipality-based energy community projects;
- Communication campaign for changing attitudes towards energy communities.

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AZ 38500/01-33/2 Bürgerenergie MOE: HU-GE TRANSFORMATOR 1.0 HUngarian-GErman Cooperation for TRANSFORMing Community Energy 1.0
(Projektdauer: 24.11.2022 - 24.11.2024)
Bewilligungsempfänger: Bündnis Bürgerenergie e.V., Berlin
Kooperationspartner 1: Solidarity Econ Center – SEC, Budapest, Ungarn
Kooperationspartner 2: Alliance for Collaborative Real Estate Development (ACRED), Budapest, Ungarn

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[1] https://european-union.europa.eu/principles-countries-history/country-profiles/hungary_en
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[3] https://data.worldbank.org/indicator/SP.POP.TOTL?view=chart
[4] https://data.worldbank.org/indicator/AG.LND.TOTL.K2?view=chart
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[6] https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?view=chart
[7] https://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=nama_10_pc&lang=en
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[12] https://iea.blob.core.windows.net/assets/9f137e48-13e4-4aab-b13a-dcc90adf7e38/Hungary2022.pdf (p. 19)
[13] https://www.irena.org/-/media/Files/IRENA/Agency/Statistics/Statistical_Profiles/Europe/Hungary_Europe_RE_SP.pdf
[14] https://iea.blob.core.windows.net/assets/9f137e48-13e4-4aab-b13a-dcc90adf7e38/Hungary2022.pdf (p. 20)
[15] https://iea.blob.core.windows.net/assets/9f137e48-13e4-4aab-b13a-dcc90adf7e38/Hungary2022.pdf (p. 24)
[16] https://iea.blob.core.windows.net/assets/9f137e48-13e4-4aab-b13a-dcc90adf7e38/Hungary2022.pdf (p. 38)
[17] https://iea.blob.core.windows.net/assets/9f137e48-13e4-4aab-b13a-dcc90adf7e38/Hungary2022.pdf (p. 68)
[18] https://iea.blob.core.windows.net/assets/9f137e48-13e4-4aab-b13a-dcc90adf7e38/Hungary2022.pdf (p. 24)
[19] https://iea.blob.core.windows.net/assets/9f137e48-13e4-4aab-b13a-dcc90adf7e38/Hungary2022.pdf
[20] https://renewablemarketwatch.com/news-analysis/403-hungary-renewable-energy-transition-presents-new-excellent-opportunities-for-investors-and-developers-in-solar-photovoltaic-pv-and-wind-power-projects
[21] https://iea.blob.core.windows.net/assets/9f137e48-13e4-4aab-b13a-dcc90adf7e38/Hungary2022.pdf
[22] Ibid.
[23] Ibid.
[24] https://www.irena.org/-/media/Files/IRENA/Agency/Statistics/Statistical_Profiles/Europe/Hungary_Europe_RE_SP.pdf
[25] https://iea.blob.core.windows.net/assets/9f137e48-13e4-4aab-b13a-dcc90adf7e38/Hungary2022.pdf (p. 71)
[26] https://iea.blob.core.windows.net/assets/9f137e48-13e4-4aab-b13a-dcc90adf7e38/Hungary2022.pdf
[27] Ibid.
[28] Frieden et al. 2020. Collective self-consumption and energy communities: Trends and challenges in the transposition of the EU framework. Working Paper Compile project.
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[30]https://www.cashawards.eu/2021/03/29/light-at-the-end-of-the-tunnel-for-renewable-energy-communities-in-hungary/
[31] https://iea.blob.core.windows.net/assets/9f137e48-13e4-4aab-b13a-dcc90adf7e38/Hungary2022.pdf
[32] "A main priority is to extend net metering (or an equivalent incentive programme) to apartment blocks. Laying the groundwork for establishing communities within the transformer zones is a second-level goal. The option of managing "village heating plants" as energy communities is mentioned as a third step. As regards the establishment of renewable energy communities, the question of vulnerable consumers and the security of supply is assigned a priority"
Frieden et al. 2020.(p. 24, see above)
[33] Examples:1) Failure of the greenfield project, Napenergiaklub (Solar Energy Club), which aimed to collect community funding to invest in a greenfield 500 kV solar project in the feed-in-tariff scheme, due to the legal gaps; 2) Failure of the project by PV-Invest Magyarország, which planned to form a community solar park in cooperation with Energiaklub NGO in 2017, due to obstacles within the Hungarian Electricity Act and the Act on Credit Institutions and Financial Enterprises.
SEC [Solidarity Economy Center]. 2022 Community energy development agency in Hungary. A concept for facilitating community energy. Pre-study for the Deutsche Bundesstiftung Umwelt
[34] https://euagenda.eu/upload/publications/2021-04-29-hungary-rrf-assessment-final.pdf
[35] https://www.rescoop.eu/policy/hungary-rec-cec-definitions
[36] SEC [Solidarity Economy Center] 2022 (see above).
[37] https://mtvsz.hu/kozossegi-energia (26/10/2022)

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[39] http://www.pornoapatitavho.hu/ (26/10/2022)
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[41] SEC [Solidarity Economy Center] 2022.
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[43] https://keep.eu/projects/21495/Collaboration-between-publi-EN/
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[45] https://www.euki.de/en/euki-publications/community-energy-guide/
[46] https://www.euki.de/en/news/unleashing-community-energy/
[47] https://energiaklub.hu
[48] http://www.justiceandenvironment.org/earl/team/environmental-management-and-law-association-hungary/
[49] Developed a 1.3 MW solar power plant in Tolna, in central Hungary (https://iea.blob.core.windows.net/assets/9f137e48-13e4-4aab-b13a-dcc90adf7e38/Hungary2022.pdf)
[50] https://rekk.hu/downloads/events/Summary_New_actors_on_the_energy_market.pdf
[51] One of the very few genuine citizen energy initiatives in the country, although not expected to reach the organizational development to be registered formally as an energy community https://www.facebook.com/profile.php?id=100064349063329 (26/10/2022)
[52] Located in the 8th district in Budapest, the communally operated community centre hosts a dozen social initiatives, including NGOs, a communal kindergarten and a boxing club. The 36 kWp solar rooftop solar project was installed with the help of the Solidarity Economy Center. The aim is to set up a community energy fund from the solar revenues to finance energy efficiency improvements in the building.
[53] https://mtvsz.hu/magunkrol
[54] Internal Electricity Market Directive (IEMD) for citizen energy communities (CEC) and Recast Renewable Energy Directive (RED II) for “renewable energy community” (REC) definitions