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EMPOWERMENT TOOLKIT AND KNOWLEDGE REPOSITORY

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Resources to overcome disempowerment.

Technical, political, and regulatory knowledge: PESTEL Analysis

The EnergyPROSPECTS consortium has made use of the PESTEL analysis tool to identify and describe the external factors that favour or hinder the emergence of ENCI while also obtaining information on the conditions that might affect ENCI cases in the future, identify opportunities to back ENCI, as well as threats or barriers that could thwart its progress. The model is displayed below so that it can be properly applied to the initiative of which it is a part. Certain specific descriptions of the nine countries participating in the project have also been included.

More detailed information is available here
D4.1. Strategic collective system building activities and institutional change
D4.2. Enhancing the transformative agency of energy citizenship
D5.1. Analytical report on PESTEL factors in the EU context
D5.2. Analytical report on PESTEL factors in the national and local contexts

Political Factors

P1. KEY POLITICAL OBJECTIVES, TARGETS AND GOALS

National policies and political goals aim to reduce net GHG emissions, increase renewable energy production, efficiency, and savings. Citizens and communities should be involved in energy transition in various ways and capacities.

Local example from Spain::

The Galician government has created a transformation plan called Next Generation Galicia to promote sustainability, innovation, and fairness in the post-COVID-19 world. The plan aims to improve energy efficiency in public institutions, expand the use of renewable energy sources, and establish living labs for renewable energy use. It also promotes smart mobility systems, alternative fuels, and digitalization of electricity infrastructure.

P2. MULTI-LEVEL ENERGY GOVERNANCE STRUCTURE OF A COUNTRY

Policies and measures aimed at decentralisation of the energy system, enabling development of decentralised and citizen-led renewable energy production.

Local example from the Netherlands:

The municipality of Horst aan de Maas in the Netherlands offers citizens four ways to participate in renewable energy projects: co-ownership, financial participation, environmental fund, and local residents' scheme, as outlined in the Dutch Climate Agreement (2019). These options allow locals to co-own, financially contribute, and benefit from green energy initiatives.

P3. POLITICAL SUPPORT FOR ENCI

A broad set of procedures and modes of political actions supporting different aspects of citizens' participation in the energy transition. The goal is to ensure that the public is given early and effective opportunities to participate in the preparation of the national energy and climate plans. Likewise, it intends to establish multilevel climate and energy dialogues with the local authorities, civil society organisations, business community, investors, stakeholders, and the general public.

Local example from Latvia:

The municipality of Valmiera operates a consultative council, Youth Affairs Advisory Commission, and Entrepreneurs' Advisory Council to encourage citizen involvement in decision-making and dialogue with local stakeholders. Regular project competitions and neighborhood movements promote cooperation and community improvement.

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P4. POLITICAL/ DEMOCRATIC CULTURE AND TRADITIONS

Levels of 'participative governance' of citizens in the energy system and political commitments to energy democracy, as well as the general manifestations of participatory and deliberative practices in policy. These include various organisations of civil society, semi-governmental organisations, and public-private partnerships.

Local example from France:

Local development councils are compulsory in PETR (Pôles d'Équilibre Territorial et Rural) and inter-municipalities with over 50,000 inhabitants. The development councils consist of citizen volunteers and civil society actors. This action provides a space for dialogue, deliberation, and citizen proposals.

P5. INCLUSION AND EMPOWERMENT POLICIES

'Inclusion and empowerment policies' allow passive or thus far inactive ENCI to lead sustainable energy spere aiming to achieve sustainability and energy democracy goals, particularly for vulnerable groups.

Local example from Hungary:

Budaörs and Kispest have implemented training programs for pensioners and the poor, promoting climate strategy and empowering municipal employees to be more active citizens and energy conscious.

Economical Factors

EC1. GENERAL ECONOMIC SITUATION / INFLATION RATE AND PURCHASING POWER

Economic conditions influence ENCI behaviours, potentially promoting financial empowerment and innovation, but also potentially causing passive energy consumption.

Local example from Germany:

Mecklenburg-Western Pomerania (GDR) has seen significant technological and economic success in renewable energy, with a high percentage of wind energy attributed to lower population density in rural areas, enabling easier construction of large wind parks.

EC2. ENERGY PRICES (INCL. COST OF RENEWABLES AND FOSSIL FUELS)

High energy prices increase energy poverty and socio-economic inequality, potentially causing societal shifts in energy justice and democracy practices. They can lead to collective action, protests, and social movements, potentially fostering conscientious or competitive ENCI behaviours.

Local example from Belgium:

Extreme energy prices have boosted ENCI initiatives like ULB energy efficiency mission, benefiting HOSe, an institutionally hybrid hydroelectricity enterprise, allowing for increased revenues to strengthen financial balance.

EC3. ENERGY MARKET

Governments regulate energy prices through subsidies, taxation, and emissions trading for energy security and environment. Liberalization and decentralization enable ENCI through decentralized renewable energy production, particularly citizen-led communities.

Local example from Bulgaria:

The documentary series "The Independent" by the Bulgarian Solar Association explores the stories of Bulgarian citizens transitioning from the grid to sustainable energy sources. It highlights challenges such as resistance and bureaucratic complexities.

EC4. ECONOMIC POLICY INSTRUMENTS

Energy taxation encourages clean energy adoption by making certain energy sources more expensive, thereby increasing renewable energy production and consumption. State aid can also support ENCI.

Local example from Spain:

Clean energy users are taxed positively, with a 21% value-added tax and special taxes on hydrocarbons, coal, and electricity. Regions can fund renewable energy support programs, and Autonomous Communities can regulate their own taxes.

EC5. FINANCING AND INVESTMENT OPPORTUNITIES CONTRIBUTING TO A MORE SUSTAINABLE ENERGY SYSTEM

Funding programs for ENCI can impact individuals and organizations' ability to achieve their ideals. Poorly developed funding can lead to financial risks, while properly developed funding can lead to late adopters and mainstreaming of ENCI, affecting its social distribution.

Local example from Hungary:

Hungary's local authorities are leveraging direct EC funds to recover lost municipal income due to insufficient government support and approval requirements for larger investment measures.

Social Factors

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S1. LEVEL OF INCOME / WEALTH DISPARITY AND ENERGY POVERTY

The welfare of citizens impacts energy community initiatives, with higher income levels enabling greater investments, while low-income households face uncertain futures due to wealth imbalance and rising energy bills.

Local example from France:

There are regional differences when it comes to energy poverty. Households in Grand Est, Bourgogne-France Comté, Hauts-de-France, and Aubergne-Rhône Alpes are disproportionately affected by colder climate, income levels, housing type, construction year, and energy use.

S2. ENERGY LITERACY, AWARENESS AND SKILLS

Energy literacy encompasses four main aspects: energy devices, actions, finances, and general energy-related knowledge. It encourages energy conservation, inspires energy consciousness, and encourages joining energy communities.

Local example from Ireland:

Galway City Council and the Tipperary County Climate Adaptation Strategy are enhancing citizen awareness of climate change impacts and updating tenant information on minimizing emissions.

S3. CITIZEN ENGAGEMENT AND PASSIVITY IN SOCIETY

ENCI involves citizens actively participating in the energy transition process, such as decision-making, ownership of energy production, and participating in social movements. Passive energy citizens are those who are not driven to act, including vulnerable, disempowered individuals. The concept emphasizes citizen engagement and empowerment for achieving carbon neutrality.

Local example from Spain:

Montes Vecinales of Tameiga, a community in Galicia, manages part of Monte Faquiña industrial estate and its own socio-cultural center. They recently created the first Energy Community in Galicia, installing PV panels.

S4. TRUST (OR LACK THEREOF) IN INSTITUTIONS AND COLLECTIVE ENDEAVOURS

Mistrust in energy-related initiatives in European countries is a significant issue, potentially affecting the energy transition. Eastern European countries often associate cooperatives with communism, while Western European and Nordic countries have a strong tradition of social enterprises and community ownership.

Local example from Latvia:

Latvian residents trust local governments more than civil servants, with 42.1% of respondents expressing trust (oecdilibrary.org).. A survey in Riga found 45% satisfied with the city council's activities, while 8% identified issues and 3% expressed concerns about corruption.

Technological factors

T1. AVAILABILITY OF TECHNOLOGIES FOR THE DECARBONISATION OF THE ENERGY SECTOR AND RENEWABLE ENERGY

Citizens need access to technologies like solar photovoltaics and solar thermal for decarbonisation and renewable energy production. Offshore wind and ocean energy are centralized, causing citizen protests. Hydrogen is crucial for decarbonisation, but ENCI primarily consumes it.

Local example from Germany:

In 2022, a 50-kW PV system was built on a radiology centre's façade near Marburg's main railway station. The project, financed through a long-term PPA, showcases the potential of photovoltaic power plants on a small scale, showcasing the partnership between the Sonneninitiative association and Marburg municipal utility.

T2. DECENTRALISED ENERGY SYSTEM AND STORAGE

Decentralised distribution networks are significant preconditions for citizens to produce their own renewable energy and be able to distribute it.

Local example from Hungary:

Decentralisation in Kispest is supported by the active grassroots Energy Efficient Wekerle initiative, whose members can support the work of the municipality with expertise, experience, local knowledge and a well-developed community network (Climate strategy of Kispest, 2020).

T3. DIGITALISATION OF THE ENERGY SYSTEM

Digitalisation of energy systems improves citizen participation, consumption feedback, and awareness towards lower consumption through smart grids, smart metering, smart mobility, and ICT solutions for renewable energy producers.

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Local example from France: FLEXGRID is a deployment programme for the optimisation of energy systems in the Provence-Alps-French Riviera region. A 100% renewable, virtual power plant is part of the projects financed by the programme.

Local example from Bulgaria: The enterprise ADD Bulgaria is a leading player in smart metering and remote control, offering technological solutions and a blog to dispel misconceptions about energy system digitalization.

T4. ENERGY EFFICIENT BUILDINGS

Buildings account for 40% of total energy consumption in the EU. Buyers and tenants of houses should be informed about the energy performance of buildings to be able to take proper measures regarding building renovations.

Local example from Latvia:

Latvia's residents in Liepaja, Valmiera, Ventspils, Jelgava, and Riga are actively promoting energy efficiency in their buildings. Valmiera won the "Most Energy Efficient Multiapartment Building" in 2019 and is actively renovating and ensuring proper operation, with elders and apartment owners being educated.

Environmental factors

EN1. CLIMATE VULNERABILITY

Climate change drives ENCIs, driven by action, adaptation, and a liveable future. Economic and political regulatory reform are essential, but individual actions and decisions are increasingly important.

Local example from Bulgaria:

ENCI protests against deforestation and construction in protected sites and coastlines are occurring in multiple cities. Protests were sparked by a government decision to construct a second gondola lift within protected areas. Protesters argue that exceptions should not be made for such projects, as they are unconstitutional, environmentally destructive, and could lead to increased construction investments. Students are actively promoting energy citizenship by participating in protests, collectives, and educational events.

EN2. AVAILABILITY OF RESOURCES

The availability of resources, including renewable energy potentials, varies across countries, leading to diverse support schemes. Transitioning to a greener lifestyle can be influenced by the openness to use existing renewable energy producers and their potential as models for future initiatives.

Local example from Spain:

Parque Nordés, an offshore wind farm in Galicia, has garnered support from some citizens for its role in offshore wind farm construction and R&D. However, environmental organizations argue it negatively impacts birds, fishing, and the sea, endangering the region's economy and potentially threatening fishing activities.

EN3. POLLUTION

Energy transition impacts daily life, with noise pollution driving sustainable transport, air pollution promoting green solutions, and visual pollution from renewable energy systems.

Local example from the Netherlands:

Noise and visual pollution impact sustainable energy generation in Horst aan de Maas, according to the KODE Framework. The municipality engages with residents and landowners through public consultations to address potential nuisance.

EN4. CONFLICTS AND OPPORTUNITIES ABOUT LAND USE

Identifying suitable land for renewable energy can cause conflicts, especially in agricultural or protected areas. However, in polluted or poor-quality areas, establishing renewable energy systems linked to ENCIs can be beneficial.

Local example from Ireland:

Renewable Energy Systems was approved for a 42-hectare solar farm in County Tipperary in 2022, but objections were raised due to its impact on the area's visual beauty and potential removal of viable farming land.

Legal factors

L1. LEGAL FRAMINGS OF ENCI FORMS

ENCI's national legal frameworks can vary, encompassing consultative processes, legal status for alternative practices, citizen consumer recognition, regulatory simplification, and information provision, but may limit its scope.

Local example from Latvia:

The Riga City Energy Agency prioritizes energy communities in EU-wide projects and emphasizes the importance of 58 neighbourhoods in Riga's sustainable development strategy. The Riga Neighbourhood Alliance has been established, and Valmiera municipality is debating energy communities and smart villages for the next year.

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L2. LEGAL MEASURES TO VULNERABLE CONSUMERS, ENERGY POVERTY AND SOCIAL INCLUSION

This factor encompasses various policy measures aimed at addressing energy poverty, including promoting energy efficiency measures for vulnerable consumers and enabling participation in the energy market.

Local example from Belgium:

Belgium's wealthier Flanders is home to high levels of energy poverty, affecting specific demographic groups. Around 680,000 inhabitants, or 280,000 families, live below the poverty threshold, with 16% of families in energy poverty. Single-parents, elderly, and those in social housing are particularly vulnerable.

L3. RIGHTS AND DUTIES OF CONSUMERS, PROSUMERS AND NEW PRODUCERS IN INTERACTION WITH THE ENERGY MARKET

National regulatory frameworks outline consumer rights and duties. These rights include clear consumption information, individualization of energy consumption, easy grid access procedures, and cost-covering remuneration.

Local example from Germany:

Stadtwerke Wolfhagen, a distribution system operator, achieved 100% renewable energy consumption in 2015 and launched a pilot project in Demand Side Management (DSM). The project encourages load shifting to high renewable generation by exchanging price signals between residents and the DSO. Despite winning the national "Energy Efficient City" competition, the project did not result in a local DSM implementation.

L4. BUREAUCRACY AND RED TAPE

Simplifying administrative procedures and setting clear time-limits for decision-making by authorities can reduce administrative costs and improve efficiency in electricity generation installation authorization.

Local example from France:

Island and coastal communities in Brittany face significant administrative hurdles in developing wind turbines, including Coastal Law, Natura 2000, protected areas, and historic monuments, which can be difficult to circumvent due to lack of staff.

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Overview of the PESTEL Analysis of ENCI in Belgium

[Find more information on the website]

Belgium (officially, the Kingdom of Belgium) is a Western European country. The population is around 11,6 million (2023).

Belgium has a temperate maritime climate characterized by moderate temperatures, prevailing southerly to westerly winds, abundant cloud cover and frequent precipitation.

An outstanding feature of Belgium is the strongly federalised institutional structure. The three regions Wallonia, Flanders and Brussels are federated entities, just as there are the three language communities: Flemish, French, and German. A specificity of Belgian federalism is the absence of hierarchy between these governmental tiers. The competences are divided on an exclusive basis between the three political-administrative levels. At the middle and lowest political-administrative levels, we find respectively the provinces and the communes (municipalities). This complex multi-level governance is sometimes referred to as the 'institutional lasagne', and the ensuing difficulty to reach agreements and make binding decisions is often lamented. This diversified/fragmented institutional structure might weaken federal-level, centralised governmental support for (certain forms of) ENCI. On the other hand, this does not mean that Belgium is an 'institutional void', the institutions for energy policy do exist, and abundantly so. The regions have competences for issues such as energy efficiency, the promotion of renewable energy, public transport, transport infrastructure, urban/rural spatial planning, agriculture policy, and waste management. Meanwhile, the federal level retains important competences such as fiscal policy, norms for products, the safeguarding of national energy security, nuclear energy, territorial waters (including offshore wind energy), public buildings, and the railways. The federal government can thus support regional-level policies about climate, air quality, and energy.

This potential for coherent multi-level governance is reinforced through three deliberation platforms: The coordination platform for energy policy CONCERE/ENOVER, the coordination committee of international environmental policies, and the national climate commission (CNC). In fact, there is a range of governmental, semi-governmental, market, Third Sector and civic organisations that act as empowering 'intermediaries' for ENCI.

The current conditions in Belgium seem to be very conducive to the flourishing of ENCI. Several context factors can be conducive to ENCI, whilst they are otherwise widely considered to be undesirable themselves: The Environmental factors indicate vulnerabilities, concerns and pressing problems. These are the typical problems that nobody wants, but for ENCI these problems have a positive significance as they act as mobilizing factors (and in turn, high levels of ENCI promise to be a helpful factor in the resolution of these environmental problems). In similar vein, economic adversity and financial pressures have been marked as positive factors, as incentives towards ENCI. The particularly pressing technological problem in Belgium of the poorly performing building stock has equally been marked as an ENCI-inciting factor.

A significant part of citizens appears to be falling in the category of 'passive', 'indifferent' or in any case not fully responsibility-taking citizens. This appears to be linked up with issues of socio-economic marginalisation, and with low levels of trust in institutions. ENCI may remain limited to frontrunners and early adopters in Belgium – notwithstanding otherwise favourable circumstances in terms of wealth, safety, and technological means.

The outlook for the national ENCI ecosystem is, first, that it is going to remain fragmented or federalised. There is a range of means of empowerment that is going to become available from federal level action, but ENCI will remain regionalized and localised. As the energy transition process proceeds, it is quite probably that governmental, semigovernmental and business organisations will remain important leaders-of-action. Together they might undertake a thorough renovation operation, not only of houses but also of Belgian society more broadly. Considering the joint force of the institutions, it is not inconceivable that quite a big part of the energy transition will still be undergone by the Belgian population in not very active roles. The roles of the public will arguably involve a mixture of ENCI, and of the energy consumer roles as they have historically evolved in the Belgian welfare state.

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Overview of the PESTEL Analysis of ENCI in Bulgaria

[Find more information on the website]

Bulgaria is a country located in the southeastern region of the European continent, occupying the eastern part of the Balkan Peninsula. The population is around 6,6 million (2023).

Bulgaria is characterized by two climatic regions: a continental climate in the north and a Mediterranean climate in the south. The country's Mediterranean climate tends to be hot and dry in the summers and cool in winters. The mountains that differentiate the northern and southern regions have a significant impact on the country's temperature. Bulgaria is a parliamentary republic and is a unitary state with a centralised structure. It consists of 27 provinces and a metropolitan capital province (Sofia-Grad). The regional governors are appointed by the government.

The democratic culture in Bulgaria is rather low and most citizens are passive and refrain from involvement with public problems. A distrust towards state institutions is prevalent and most citizens are sceptic that something can change through their participation. This inevitably shapes the attitudes regarding participation in public activities, including creating or joining a group or community to pursue a certain goal. Such reservations are also valid for different forms of energy citizenship, despite the generally positive inclinations towards participation in the energy transition through generation of own electricity or energy renovation of homes. The existing civic sector often lacks resources (material and human) and expert capacity for active participation in the energy governance. Another considerable obstacle is the inability (or reluctance) of institutions to engage in dialogue with citizens. Mechanisms and venues for involvement of civil sector exist, but they are insufficiently used and often ineffective. As a result, the energy policymaking in Bulgaria is seldom based on broad public debate and real stakeholder involvement.

The Integrated National Energy and Climate Plan of the Republic of Bulgaria until 2030 acknowledges that citizens should have an active role in the energy system, however specific measures that support such a role have yet to be developed. The vague recognition of citizens as active participants in the energy system in the country, not supported by concrete regulations and measures, hinders the development of ENCI.

In general, political (clear political support for ENCI), economic (energy prices and financing and investment opportunities) and technological factors (availability of RES technologies, green and smart mobility) seem to be predominantly supportive, contributing in different ways to a formation of a (potentially) fruitful field for the ENCI cultivation. Environmental factors are ambiguous – while some act as motivation for ENCI, others represent a considerable barrier (e.g., urgency of action against climate change has accelerated the establishment of energy citizenship in Bulgaria, but there are also numerous constraints to use of renewable energy sources). The analysis show that legal factors are a strong deterrent for energy citizenship in Bulgaria as there are still no clear rules, procedures, and regulation for the establishment of energy communities or other forms of energy citizenship. Social factors proved to be equally discouraging – again a rather inevitable outcome for the poorest EU member state (large wealth disparity and energy poverty, low energy literacy and high distrust towards institutions).

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Overview of the PESTEL Analysis of ENCI in France

[Find more information on the website]

France is located on the western edge of Europe. The population is around 64,7 million (2023). France's climate is temperate but divided into four distinct climatic areas. The oceanic climate of western France, central and eastern France's continental climate, the Mediterranean climate of south-eastern France and France's mountain climate.

France is a semi-presidential republic with a head of government - the prime minister - appointed by the president who is the directly elected head of state. France's territory consists of 18 administrative regions - 13 metropolitan (i.e., European France) and 5 overseas regions. All 5 of the overseas regions, as well as Saint-Martin (a French territory in the Caribbean) are considered part of the EU (with the status of outermost region).

Traditionally, the energy governance structure in France has been highly centralized and the French energy system has been characterised by the dominance of nuclear power together with a preference for large state-led projects and strong national utilities. While the traditional network of political and administrative elites is considered to still uphold key power positions in the French energy governance system, the liberalisation of energy markets has opened a window of opportunity for the involvement of local authorities and actors and served to empower other economic actors vis-à-vis the state. The competences accorded to local and regional authorities in France however only gives them a certain degree of power. Key levers of ENCI, such as energy market regulation, price setting, support schemes for renewable energy and energy efficiency are for example under the control of the central government.

The increasing focus on climate change mitigation has however led the state to empower local and regional actors to contribute to national objectives. In terms of governance, the regional and sub-regional levels are bound by the 2015 Law of Decentralisation to implement their own climate and energy transition goals aligned with the overarching national framework described above.

During the 2021-2022 energy price crisis, households, businesses, and organisations have been encouraged by the government to adopt energy sufficiency measures, this is likely to continue in the coming years as sufficiency is becoming increasingly accepted as an important climate mitigation strategy. While support systems such as the energy check and support for low-income households for energy renovations exist, overall, vulnerable groups remain more marginalised than average and/or wealthier citizens in the energy transition. This reveals the fact that energy citizenship mostly relies on the individual capacity to act. There is a lack of collective action and public services that would favour inclusive participation of all. Important barriers remain for the scale-up and access to energy communities, renewables self-consumption, and overall deployment of renewable energy. The new law on the Acceleration of Renewable Energy Deployment that was adopted in the beginning of 2023 does not sufficiently consider the citizen dimension of renewables deployment.

The largest opportunities identified for the development of ENCI are the energy price crisis that has incited energy savings, energy sufficiency as a tool for climate mitigation.

- France's vibrant civil society which has been active in the climate struggle in recent years, the ambition to be a leader in the transition and in climate mitigation in Europe
- The geographical potential for renewable energy (especially for wind power and photovoltaics together with the early legal recognition of self-consumption).
- Largely adequate transposition of RECs and CECs (however with much room to improve the support for citizen-led renewable energy projects).
- And an institutionalised "right to debate".

Overview of the PESTEL Analysis of ENCI in Germany

[Find more information on the website]

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Germany (officially, the Federal Republic of Germany) is located in central Europe and is divided into 16 states (Lander) commonly, referred to as Bundeslander. The states are further divided into 401 administrative districts, of which there are 294 rural districts (Kreise) and 107 urban districts (Kreisfreie Stadte). The population is around 84,4 million (2023)

Germany has a temperate climate throughout the country with warm summers and cold winters, however long periods of frost or snow are rare. Rain falls throughout the year. Germany is a federal parliamentary republic with a head of government - the chancellor - and a head of state - the president - whose primary responsibilities are representative. Each of the 16 states have their own constitution and are largely autonomous regarding their internal organisation.

The Federal Government and the Länder engage in continuous coordination on the implementation of the energy transition. The institutional coordination is complemented by a continuous co-operation and exchange on technical level. On federal level, the Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway (BNetzA) serves as the most important regulatory authority for overseeing the regulation of transmission and distribution networks. BNetzA ensures compliance with the Energy Industry Act and its respective ordinances. To achieve that goal, BNetzA has a legislative function by specifying the regulatory regime and it has also various monitoring, investigation, and enforcement tools. Regulatory authorities also exist at state level. They mainly deal with smaller electricity networks that fall outside the scope of BNetzA (that is, networks with less than 100,000 connected customers and that do not cross state borders).

The RES Act 2023 provides a relevant framework to enhance the development of cooperatives and communities, and therefore, the various related forms of ENCI, notably by ensuring their democratic content and the related citizen control and by preventing possible abuses. Considering citizens willingness to take part in the energy transition, especially through collective ownership of RES, this might become an important driver for further developments of citizen energy. However, some aspects of ENCI support are still lacking in the new German regulations, and especially regarding the energy poverty issue, which is barely addressed and could prove to be a major barrier for part of the German citizens.

The overall situation of ENCI in the country must be assessed positively, after a short period of doubt about the German pioneer status for the development of RES. The planed phase-out of nuclear power and exit of coal are still an ongoing challenge and the recent policy and economic framework shows that the German Government intends to take back control over the energy transition towards a renewable and decentralised energy system. The national ENCI ecosystem appears currently favourable for the development of a highly diversified ENCI. This requires also that the willingness to get involved within the German population turns into active involvement, a process that is still dependent on the adoption of further facilitating frameworks – such as balcony solar plant or energy sharing.

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Overview of the PESTEL Analysis of ENCI in Hungary

[Find more information on the website]

90% of the Hungary's total primary energy supply comes from fossil fuel and nuclear sources. It means that the country is highly dependent on external fossil fuel and non-renewable resources. The energy system is highly centralised with little intention of decentralisation. Renewable energy utilisation and community energy are not in the forefront either since it would require a more flexible and less centralised system. Due to the rather centralised nature of the Hungarian systems (energy, governance, education, etc.) citizens have limited space to be active citizens, especially if they wish to be prosumers. Specific legal barriers also hinder the development of ENCI and the wider distribution of renewable energy. This situation has slightly changed due to the energy crises started of 2021-22. The biggest barriers to the development of ENCI in Hungary originate in political decision-making and legal regulations.

Although various national strategic documents (e.g., the National Energy and Climate Plan and the National Clean Development Strategy) clearly follow the principles expressed of the EU, in some instances, many of these national documents lack ambition and are not transported with enough details into practice in the Hungarian legislation and policy. In addition, the political communication is also often inconsistent. Another important overall obstacle is that the central government fixed the energy prices in 2010 and this weakened the motivation of the public to become active energy citizen.

One of the opportunities is that knowledge about climate change is becoming more widespread in Hungary as well. The country is currently among the more fortunate in terms of climate change impacts, but storm damages and heat island effects are being felt more and more. Personal involvement can also create a stimulating environment for ENCIs. The current energy crisis has also raised the level of energy awareness among the population, as rising utility prices have forced many people to pay more attention to these issues and to save (the government lifted the price cap in 2022). Finally, it is also a great opportunity that the general living standards – together with the per capita carbon-footprint – of Hungarians is rather low within the EU.

Hungary is located at the centre of the Central-Eastern Europe. The population is around 9.772.756 (2023).

Hungary experiences a continental climate in the east, maritime climate in the west and a Mediterranean maritime climate in the south. In general, given the average temperatures and precipitation, it corresponds mostly to a continental climate. That means warm summers and cold winters. Hungary is a parliamentary republic with a head of government - the prime minister - who exercises executive power and a head of state - the president - whose primary responsibilities are representative. Hungary is divided into 19 counties, Budapest, and 23 cities with county-level authority.

ENCI initiatives in Hungary are not in an easy position and can often feel that they are going against the flow. However, as in other parts of the world, awareness raising, lifestyle greening and community building are becoming more and more relevant. Some kinds of sustainability related systems are also becoming more and more accepted in Hungary, for example, in the field of mobility. Perhaps, precisely because ENCI initiatives in Hungary are often started from the direction of energy, they tend to take a holistic approach, addressing multiple aspects of sustainable lifestyles or somehow dealing with carbon-footprint. There is a stronger sense of community, where initiatives are successful, tightly knit communities are formed, typically with one or two leading characters.

Top-down initiatives can often succeed because of the low level of proactivity in a post-socialist society. These top-down initiatives are essential because they can often provide the missing initial push, that is natural in Western societies, which can start a resident on the path of becoming an active citizen.

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Overview of the PESTEL Analysis of ENCI in Ireland

[Find more information on the website]

Ireland (officially, the Republic of Ireland) is located off the northwestern coastline of continental Europe and the population is around 5 million.

The dominant influence on Ireland's climate is the Atlantic Ocean. Consequently, Ireland does not suffer from the extremes of temperature experienced by many other countries at similar latitude. The warm North Atlantic Drift has a marked influence on sea temperatures.

In 2021 in Ireland, over 60% of electricity production came from fossil fuels, 30.7% from wind power, 3.2% from hydropower and 3.1% from biofuels. Only 0.3% came from solar energy. The price of electricity (taxes included) for domestic consumers in the first half of 2022 is 0.2741 euros per KWh. The share of renewables in energy consumption at EU level reached 21.8% in 2021. The current EU target is to reach 32% renewables by 2030. One of the lowest proportions of renewables were recorded in Ireland (12.5%) in 2021. Ireland is a parliamentary republic consisting of 26 counties, 3 city councils, 2 city & county councils.

In Ireland, decision-making power on energy policy is strongly centralised with the national level holding key competencies. Nevertheless, subnational governments, especially the 26 counties, still play an important role in energy governance through their functions in spatial planning, community development and in implementing national policies. The counties are the main subnational administrative units and governed by elected county councils.

Historically Ireland has lacked a culture of, and political support for, ENCI. Ireland has been, and continues to be, a country that is heavily dependent on carbon emitting fossil fuels for its energy supply. The Irish energy system has traditionally been centralised with neither the technology, funding, nor political will to decentralise it. However, over the past few decades this has begun to change. Recent years have seen a sharp rise in efforts to transition to a low carbon energy system, with ENCI increasingly becoming a central focus of environmental policies, strategies, and action plans. In line with this, the Irish Government has implemented several policies aimed at developing ENCI in Ireland, including energy literacy campaigns, funding for renewable energy micro-generation and retrofitting programmes, investment in green mobility, providing legislative and legal frameworks to protect and include citizens in the energy sector, creating channels for citizen engagement, and working towards decentralising and digitalising the energy sector. All these actions have started to establish ENCI, as is evidenced by the number of people engaging in retrofitting and micro-generating schemes as well as more than 600 Sustainable Energy Communities (SEC) designated by the SEAI. However, nationally, the development of ENCI has been arguably limited, particularly in contemporary times of rising inflation and energy prices, diminishing real income, a worsening housing crisis and record high levels of energy poverty.

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Overview of the PESTEL Analysis of ENCI in Latvia

[Find more information on the website]

Latvia (officially, Republic of Latvia) is a Baltic country situated in Northeastern Europe. The population is around 1,8 million (2023). Latvia is located in the temperate climate zone, relatively flat terrain, the proximity to the sea and air masses from the Atlantic Ocean influence their climate. Climate is mild and humid with four explicit seasons. It is a parliamentary republic, subdivided into 110 one-level municipalities and 9 cities, with their own city councils and municipal administrations.

The energy and climate policies development and implementation have been transferred to the new Ministry of Climate and Energy. At the same time, certain important functions providing synergy with energy & climate policy remain with the Ministry of Economics (MEC) and the Ministry of Environmental Protection and Regional Development (MEPRD). The political framework can be seen as a moderately supportive factor for ENCI. While political objectives and goals for the energy transition emphasize the importance of promoting civic participation and involving citizens in the energy transition process, they lack clear targets (e.g., there is no clear definition of the specific number of energy communities that should be established).

There are no 2nd-level (regional) municipalities in Latvia, but five planning regions, responsible for regional development planning, are established. Currently, there are 43 first level (local) municipalities. There are two types of administrative territories in Latvia - (i) territories of local governments of State cities, and (ii) territories of local municipality (novads) governments.

Development of municipal-level energy-climate action plans is voluntary; however, they have been elaborated (for the main part or whole area) by more than half of municipalities. On January 1, 2023, a new Law on Municipalities came into force, enhancing how local governments now operate by incorporating more of the public into all operations.

Regarding ENCI, important are the actions of the NECP2030, particularly in the directions of “Public information, education and awareness raising” and “Involvement of society in energy production”. The NECP2030 envisages financial support for the household sector, both energy efficiency improvement and RES utilisation.

Society's involvement in energy self-production using non-emission technologies can generally be assessed as still low, however with a clear growing trend. The boom of solar PV installations in the single-family dwelling sector is the result of the combination of several factors, particularly, a high rise in electricity price, good grid capacity to accumulate micro-generation devices, digitalised and simple permitting procedures, and state programme for equipment purchase co-financing. In turn, communities of apartment owners operate for energy-efficient renovation of multi-apartment buildings. However, current practices are mostly limited to single multi-apartment building, as there are not yet energy communities in Latvia, as provided by the recast REDII.

The specific climate and energy focus of the newly created ministry may also be beneficial for ENCI: even though currently no information directly related to ENCI, this can be an opportunity to improve ENCI's framework conditions in the country. In 2023, the National Energy and Climate Plan will be updated, and new actions must be included to meet the targets of the EU “Fit for 55 packages”. In the context of EU-level priorities, an important role in Latvia's Recovery and Resilience Plan is dedicated also to climate change. The Plan provides for climate and environment-related investments to be concentrated in a separate component to ensure the investment threshold of more effectively 37% for climate goals set in the EU regulation. This could serve as an additional tool to promote energy citizenship, but everything depends on how the government plans to implement this. Another instrument, particularly for the promotion of collective ENCI forms might be the Modernisation Fund, particular programmes of which are under elaboration now.

The recent geopolitical situation and the high prices of energy resources have promoted high interest in installing solar PV panels for self-consumption. Both conditions are a new motivation to act and decide, this has also promoted discussions in society about the current situation in the energy sector.

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Overview of the PESTEL Analysis of ENCI in The Netherlands

[Find more information on the website]

The Netherlands is a country located in Northwestern Europe. The population is around 17 million (2023). The Netherlands is located in the 'temperate zone'. Throughout the country, mean winter temperatures are about 3°C and mean summer temperatures are around 17°C. Coastal regions have more hours of sunshine than inland regions and a relatively small annual and diurnal temperature range.

The Netherlands is a parliamentary constitutional monarchy with a head of government - the prime minister - and a head of state - the monarch. A council of ministers holds executive power. The country is divided into 12 provinces and 388 municipalities. It is also divided into 22 water districts, governed by an executive board that has authority in matters of water management.

The policy and legal environment is generally supportive for the participation of citizens in energy communities, but issues do exist such as professionalisation, energy sharing, supply, and cooperation with the Distribution System Operator which are not adequately acknowledged in legislation/practice and act as regulatory or practical can burden ENCI. Despite this, the funding instruments and support schemes for energy communities and households appear to be favourable and well-developed. Energy consumption and saving is an important part of the energy transition in Netherlands. Overall, reduced energy demand for fossil fuels in response to high prices creates an opportunity to develop new energy sources, thus supporting ENCI.

There are some key barriers to ENCI. The current general economic situation (high income inequality, low citizen purchasing power) and high energy prices have an inhibiting effect on ENCI because of a scarcity in economic resources to be invested in the energy transition.

In addition to energy poverty, technological factors are currently a key barrier for ENCI in several ways. The structure of the electrical grid constitutes a challenge for decentralisation and energy generation by energy (community) cooperatives and similar ENCI actors. There are also barriers to ENCI caused by a lack of efficiency in the built environment. Another key factor is the lack of available land for RE generation, and the high reliance on the natural gas network.

But also there are many opportunities for ENCI. These are mostly around the advanced support scheme structure of the country. Schemes such as SDE++, ISDE, SCE, have been and are supportive for ENCI emergence. Moreover, the political acknowledgement of the need for multi-level governance is beneficial for ENCI and this is seen in the progression of the RES (Regional Energy Strategy) programmes. State aid for high energy prices also has a beneficial effect on ENCI as it helps citizens financially. However, it may also have a counteracting effect by sustaining continued use of non-renewables. There is also a culture of citizen engagement, and this is seen in the high number of energy cooperatives and other non-energy related grassroots initiatives (e.g., food banks).

Finally, the increasing scarcity of non-renewables (gas and oil) can present an opportunity for ENCI emergence because the government acknowledges energy insecurity as a key issue which can be partly solved by stimulating energy communities and prosumership. Accordingly, key advancements have been made in the legal system to legitimise ENCI and give rights to actors such as energy cooperatives and citizens/households and community groups in the generation of RE.

The outlook for the future of the national ENCI ecosystem can be projected as positive, given the commitments that the government has made to further developing support structures for citizens in the energy transition and the legitimacy that citizen-based and hybrid ENCI forms have in the country.

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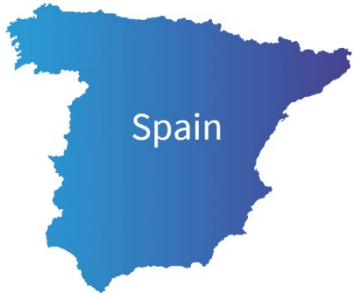
Overview of the PESTEL Analysis of ENCI in Spain

[Find more information on the website]



Spain is a country in south-western Europe with great geographical, climatological, and technological potential, as well as political, economic, and social interest for the development of different forms of ENCI. The population is around 47 million (2023).

Due to its complex orography and geographical location, Spain has a remarkable climatic variety, ranging from humid Atlantic conditions, with annual rainfall, to large semi-arid areas, with severe hydrological stress, and even cold alpine climates in some isolated areas. In addition, extreme events such as droughts, heat waves, or severe rainfall and floods are recurrent phenomena.

Spain is a parliamentary democracy and constitutional monarchy with a head of government - the prime minister - and a head of state - the monarch. A council of ministers is the executive branch and is presided over by the prime minister. Spain is a unitary state, composed of 17 autonomous communities and 2 autonomous cities with varying degrees of autonomy. Accordingly, each region have their own parliament; therefore, it could be considered fairly decentralised country.

In Spain, each autonomous region oversees the energy sector in a way that the local governments can authorise certain power plants and energy networks, also, providing financial and political mechanisms following the national energy strategy which might create relevant political, economic, and infrastructural conditions for the development of different ENCI types.

The most prominent ENCI initiatives in Spain are collective, citizen-based and hybrid. The Autonomous Communities from which the most representative examples can be drawn are Catalonia, the Basque Country and, to a lesser extent, Galicia. This is because these are Spanish regions with outstanding economic, industrial, technological, and social development, together with infrastructures suitable for the development of green technologies.

In Spain a variety of factors converge that can favour the development of ENCI types, above all at the collective level and in a pragmatic or reformist way, as well as at the individual level.

On the one hand, there is evidence of political concern in Spain for the transition to a more renewable energy system, which is materialised in a comprehensive strategic framework and in a broad and updated regulatory development. Likewise, the Spanish economy has sufficient resources such as human resources, building renovations, business networks and competitive research centres to benefit from the use of renewable energies.

In addition, there are many business actors, large corporations, SMEs, and financing programmes to provide the necessary investment for a resilient and clean energy system. Furthermore, changes in the energy system would have a significant impact on the labour market. Indeed, if the energy sector transition is managed effectively, it would promote job creation.

On the environmental level, the favourable meteorological and geographical conditions of the territory for the use of renewable energy resources can be highlighted.

Finally, at the social level, there are still obstacles to citizen participation in relation to energy use and ownership given the lack of knowledge, training and even trust in institutions. Spain's lack of tradition in municipal public services and the incipient nature of many initiatives linked to the ENCI concept (e.g. cooperatives, EC) may be a brake in this sense, although there is a growing desire to invest in collective ENCI proposals, given the growing awareness of climate change risks, as well as for reasons of economic savings.

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