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20 REMUNICIPALISATION OF LOCAL ENERGY PROVISION: The Role of Cities and Bottom-up Initiatives

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1. Introduction

Across the globe, cities are attempting to reverse the negative consequences that originated from the waves of privatisation and liberalisation that struck most countries in the closing years of the 20th century. Although these measures have brought about greater consumer choice and efficiency in sectors such as telecommunications and aviation, in others like transport, water and energy, market control by a few companies has led to increasing costs, decreasing infrastructure investments and deteriorating quality of services.

Communities are now engaging in a paradigm shift through a process called remunicipalisation or re-communalisation, whereby services that were previously supplied by the private sector gradually shift away to publicly administered municipal entities either at the national or local level. This may be achieved by a public body reassuming tasks after private concession contracts expire, a municipal utility provider being established to compete in concession bidding processes, or by terminating existing contracts prematurely through a political process that may or may not include a referendum. Most importantly, the new model is often said to be more compatible with decentralised and locally owned energy systems, offering promising prospects for integrated solutions to be developed that encourage the use of renewables and greater energy efficiency.

On March 29th 2019 CIDOB held a roundtable on “Local Energy Supplies and Re-communalisation of Utility Providers” to discuss the different ways actors are transforming the traditional schemes of local energy provision. Bringing together practitioners, civil society actors and academics made it possible to shed light on practical cases in European cities such as Hamburg, Berlin and Barcelona, as well as cases in

the Global South such as Hebron in Palestine and Montevideo in Uruguay. This policy brief is a compilation of the opportunities and existing challenges that surround processes of remunicipalisation.

2. Decentralised Energy Provision: Opportunities and Challenges

Christoph Burger of ESMT Berlin opened the first roundtable by focusing on the German experience. Since the 1990s, Germany has pursued an energy transition, the so-called *Energiewende*, which involves the application of policies promoting decentralised generation of power. In particular, the introduction of the **feed-in tariff system** through the Renewable Energy Sources Act of 2000 encouraged citizens to become producers of renewable electricity with the opportunity to feed their electricity into the grid and sell it on the market for a duration of 20 years. In effect, this comprehensive energy policy has increased the renewable energy share of total German power generation from 5% in 1999 to about 37,8% in 2018. Most of that share is in the hands of private households and small and medium-sized companies.

According to Burger, the *Energiewende* is not simply about the advent of renewable energy but of consumer empowerment, allowing consumers to compete with existing centralised utility companies. For example, in rural areas, communities are striving for energy autonomy, utilising combined heat and power (CHP) plants fuelled by local biomass as well as photovoltaic panels (PV) to create their own “bioenergy villages”, with 147 entities currently registered. Burger pointed out that the new model is not only attractive for young people: much of the investment is made by older generations

who want greater autonomy to help shift the country's energy structure towards an increasingly decentralised model. In fact, 1.6 million households actively participate in microgeneration through PV with storage capacities of about 400MW. Another initiative that stands out is *Mieterstrom*, a neighbourhood solar supply model that allows residents in rented apartments to directly use locally generated electricity from PV plants without taking recourse to the grid and paying associated charges. The programme provides incentives to landlords to produce local renewable electricity. In practice it is often specialised energy services companies that act as producers after receiving concessions from landlords for the rooftops of rented apartments.

In this manner, the establishment of bioenergy villages, rooftop PV for individual households, and tenants in urban settings engaging in *Mieterstrom* are all initiatives that contribute to consumer empowerment. Effectively, remunicipalisation advances this objective but also transforms the energy structure to one that is increasingly decentralised, allowing municipalities to work with their citizens to provide local solutions as well as special tariffs for low-income households. As there has been a history of price hikes after privatisations, there have also been hopes that public utility companies with less elevated profit expectations might be able to contribute to more affordable electricity prices.

The discussion also emphasised the importance of supply security during the energy transition. Renewable energy sources have seen dramatic cost reductions in recent years, especially PV solar, but also onshore wind power. The **International Renewable Energy Agency (IRENA) in Abu Dhabi** argues that "electricity from renewables will soon be consistently cheaper than from fossil fuels". The challenge for renewables today is not cost anymore, but intermittency, which needs to be addressed by storage solutions and integrated smart grids that can better match supply and demand. In this context, Burger mentioned blockchain technology, which could allow users to trade with each other directly and balance local energy markets. Most importantly, such decentralised ways of producing and consuming energy would further advance the goal of consumer empowerment.

3. Does the EU unbundling directive help cities to remunicipalise?

During the discussions, one of the major sticking points revolved around the issue of **unbundling** and its application across EU member states. This measure came in with the implementation of the "**Third Energy Package**" in 2009, which was designed to further liberalise and integrate Europe's energy markets. Essentially, the process of unbundling involves separating generation and energy supply from the management of transmission networks, and thereby enabling a more competitive market.

Giacomo Luciani of Sciences Po evaluated the implications of this policy on the prospects for remunicipalisation. Until recently, the Italian retail electricity market allowed consumers to be supplied at an established regulated tariff. With the recent Italian electricity tariff reform, different energy suppliers can

now compete on the energy generation component of the unbundled value chain. Energy generation accounts for only 20% of the total tariff, with the rest coming from grid charges and taxes. In this case, any attempt to remunicipalise would mostly target power generation in the network, and not necessarily distribution or the relationship with the final consumer. Ultimately, the only consumer impact would be a slight change in the part of the tariff that corresponds to the cost of generation.

This context raises significant challenges for municipal decision-makers. Remunicipalising requires municipalities to issue new tenders for concessions once an existing concession expires or is revoked. This involves extensive bureaucratic capacities and know-how that smaller municipalities in particular often lack. In this respect, policymakers need to be aware of how to balance remunicipalisation and tendering efforts. In some countries, such as Spain, established concessions also go back a long way and are so entrenched that municipal actors are often not aware when or how their expiration might come about, which would be a necessary precondition for any remunicipalisation.

4. Examining local contexts: The role of (non) dispatchable generation

Some time was dedicated to global energy trends and the role of renewables in energy mixes. Particular attention was given to the need to increase the share of renewables in the energy mix in order to tackle greenhouse gas emissions, and to the different types of renewables. For example, in Italy, **dispatchable** renewables like hydro, geothermal, and biomass that can dispatch generated electricity on demand are prominent. On the other hand, non-dispatchable renewables, such as wind and solar, are highly dependent on situational circumstances such as hours of sunshine and intensity and regularity of wind.

In Switzerland, the electricity sector is largely decarbonised, with 60% of energy coming from hydro and the rest mostly from nuclear plants. There is excess supply of solar energy in the summer but insufficient supply in the winter, necessitating imports of electricity. Against this backdrop, Luciani called into question the idea that a liberalised market is the most optimal outcome for the supply of renewables. Renewables have (i) (almost) zero marginal costs, (ii) an intermittent nature, and (iii) inherent price volatility. Increased market penetration often leads to a decrease in the wholesale price of electricity during certain hours. But this cannot be passed on to consumers as utility companies need to calculate the costs of dispatchable backup capacities, and the steep growth in non-dispatchable renewable energy capacities cannot be amortised to the same degree as before. In this context, Luciani also pointed out that an increasing penetration of non-dispatchable sources can lead to "**cannibalization effects**" between different renewable energy sources, such as solar power and (dispatchable) hydroelectricity. He suggested that a competitive unbundled market may not be the best environment for renewables and perhaps shifting to a different system such as the **Chinese model**, in which ownership of transmission, distribution and sale of power is not separated, may be more effective.

5. Two similar, yet different remunicipalisation approaches: Berlin and Hamburg

Germany is considered to be leading the remunicipalisation trend, with close to 300 cases in the energy sector alone. This is primarily due to the administrative tradition resulting from the country's federal structure, in which the provision of public services is often carried out by municipalities. Aside from motivations of consumer empowerment, other crucial factors include: (i) the disinclination of large private operators to adapt to decentralised generation and corresponding shifting needs in grid management; (ii) a strong tradition of local utilities; (iii) the *Energiewende* becoming a major policy discourse; and (iv) timing, in particular the scheduled expiry of concession contracts for the grid operators.

The two most celebrated cases of remunicipalisation include Berlin and Hamburg, where private utilities owned the concessions for the electricity, gas and district heating networks. Both cities experienced similar developments through the mobilisation of grassroots campaigns whilst also facing significant opposition from the political establishment and partners of the private energy companies. Nevertheless, thanks to Germany's legislative framework, citizens were able to opt to put the future of the local energy supply to the people through referendums, which succeeded in Hamburg but failed in Berlin. Table 1 offers a summary of the differences between the two campaigns.

In Hamburg, the referendum campaign culminated in 50.9% voting in September 2013 to repurchase the local grids for electricity, gas and district heating from Swedish power company Vattenfall. Despite significant political gridlock, with the Social Democrat (SPD) government withholding the potential tendering of the concession, a Citizens' Initiative called "*Our Hamburg, Our Grid*" formed a coalition to fight back with the objective of having a public utility operate the energy grid whilst also producing energy from renewable sources. In order to do this, the Green party in coalition with the Christian Democrats (CDU) in the city government established a municipal utility called Hamburg Energie in 2009 as an alternative energy supplier to sell non-nuclear and coal-free electricity. As a result, the city obtained licences for electricity and gas grids in January 2015 and 2019, respectively, with a potential takeover of the district heating system in 2019 as well.

Mirco Beisheim, member of the campaign board, highlighted the strengths of the campaign, which were a pro-renewable and public service political culture with significant backing from six initial NGOs such as Friends of the Earth (BUND), parts of the Lutheran Church and the Customer Advice Centre in 2010. The number of NGOs involved grew to over 50 in 2013. This broad coalition between the Green party and NGOs, combined with a majority in the referendum, created an effective strategy to legally bind the government to the objectives of the Citizens' Initiative. In Berlin, a similar process occurred except the referendum

Figure 1: Timeline of the Hamburg Remunicipalisation Process

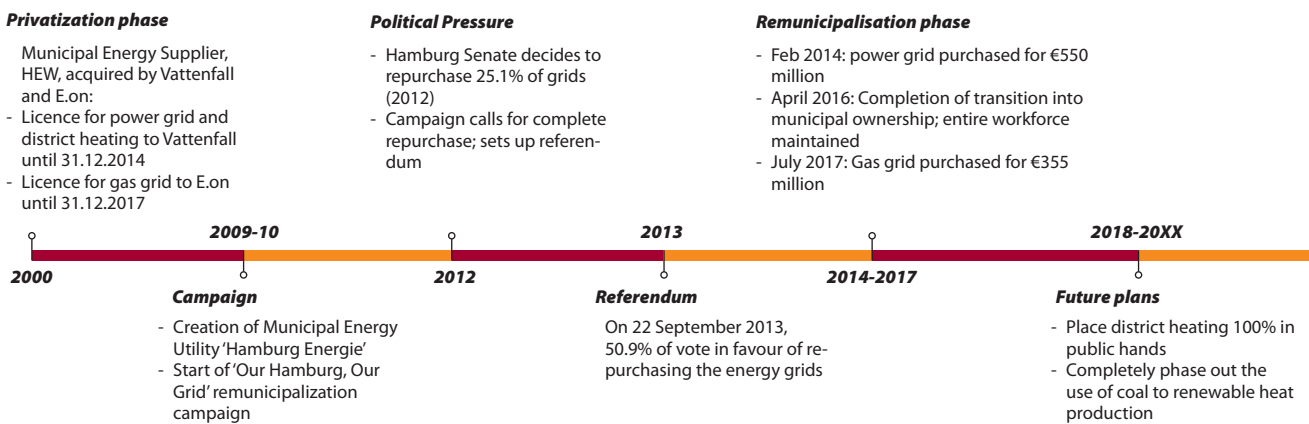
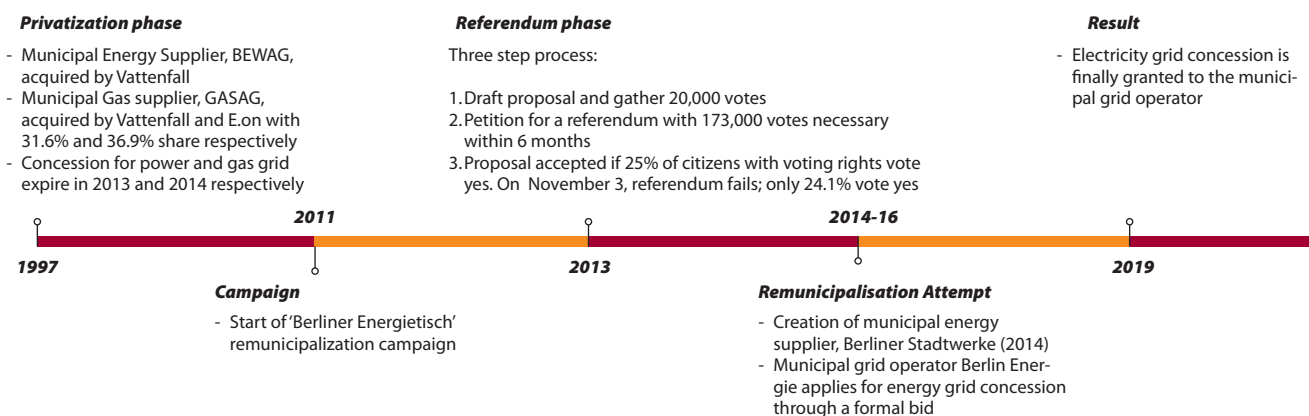


Figure 2: Timeline of the Berlin Remunicipalisation Process



failed to achieve the required turnout in November 2013. The *Berliner Energietisch* (Berlin Energy Roundtable) Citizens' Initiative, made up of around 50 civil society groups put out a draft law calling for a publicly owned local energy supplier to retake control of the electricity grid. Jörg Mühlhoff, who volunteered in the campaign, emphasised that while the aim was to have the local energy supplier exclusively produce and sell renewable energy, management of the supplier would be carried out by the Democratic Advisory Board to increase social control of energy policies. Essentially, this mechanism would advance the interests of **Berlin's citizens** through a structure that includes seven directly elected citizen representatives, two appointments from the city council, and six employee representatives.

Nevertheless, political parties were against any potential takeover for differing reasons and did not support the *Energietisch* final proposal in the referendum. The CDU argued that remunicipalisation would be financially unfeasible and highly disruptive, whereas the SPD found incompatibilities with the composition of the board. Although the campaign failed to achieve the objectives in the draft law, it pushed the SPD to implement some of them. Specifically, it established a local grid operator, Berlin Energie, with the aim of remunicipalising the electricity grid by taking part in a formal bidding process in August 2016. In addition, a municipal energy supplier, Berliner Stadtwerke, was created to implement the production of energy from solely renewable sources albeit without the adoption of the democratic control mechanism. On March 2019, the concession was finally granted to Berlin Energie.

Slight differences in the two cases notwithstanding, the remunicipalisation processes involved the complex interplay of four dimensions: (I) technological, through investment in efficient and renewable technologies; (II) economic, through strengthening the purchasing power of the community; (III) institutional, through greater administrative control; and (IV) cultural, through maintaining quality, en-

vironmental and social standards. Pia Laborgne of the European Institute for Energy Research (EIFER) in Karlsruhe emphasised the importance of treating the energy system as a complex social phenomenon where all four dimensions interact in order to ensure a successful energy transition. Furthermore, Laborgne argued that by incorporating these dimensions into the remunicipalisation process, it is possible to democratise and restructure the whole energy sector. In this respect, both cities have acted as innovators, employing an alternative model that advances consumer empowerment.

Remunicipalisation efforts in the Global South: Uruguay and Hebron

Uruguay presents another compelling case of an energy transition. Unlike the German cases, it managed to combine the public and private sectors to provide an energy model that has been largely successful to date. A country that has traditionally been highly dependent on oil and gas imports and relied heavily on hydroelectricity in power generation, the recent government has opted for a triple objective to: (i) confront the risks of water shortages due to droughts; (ii) attain some level of energy sovereignty; and (iii) tackle climate change.

The implementation of the 2005–2030 National Energy Strategy (NES) changed the country's energy model by integrating solar and wind sources and bringing about the "**world's fastest growing variable renewables market**". This **successful integration** is largely due to the country's incorporation of efficient installation targets within a highly regulated electricity system, as well as the use of hydropower to offset any variability in wind power. This has led the electricity generation market share of wind and solar to increase from 1.5% in 2013 to about 32% in 2017. Overall, by harnessing the power of renewables, Uruguay has achieved 95% of electricity generation from clean energy.

Table 1: Remunicipalisation campaign approaches in Berlin and Hamburg

Part	Hamburg	Berlin
Who took part in the campaign?	Larger social and environmental NGOs (6 in 2010 and over 50 in 2013)	Approx. 50 grassroots organisations
Political support?	Greens and CDU	Initially limited. SPD accepts some aspects of draft law after referendum, later Greens and Left in new government 2016
Target of the referendum?	Electricity grid Gas grid District heating (ongoing)	Electricity grid
Presence of four dimensions of social transformation?	Technological: Strong Economic: Strong Institutional: Strong Cultural: Strong	Technological: Strong Economic: Weak Institutional: Weak Cultural: Strong
Outcome of referendum?	Success	Failure Majority of votes, but failure to achieve the legally required 25% turnout
Was remunicipalisation achieved?	Yes Energy grids purchased	Yes Through formal bidding process after establishing local grid operator

Daniel Chavez of the Transnational Institute (TNI) in Amsterdam explained that the **swift transition to wind energy** is largely attributed to Uruguay's vertically integrated state-owned company, the National Administration of Power Plants and Electrical Transmissions (UTE), which also owns and operates transmission and distribution. In order to liberalise a segment of the market and achieve the goals of the NES, UTE was able to make agreements with independent power producers through 20-year power purchase agreements.

As for the Palestinian Territories, the energy structure is greatly affected by economic, political and geographical instability, as well as by rising energy demand. In fact, the West Bank imports 97% of electricity and 100% of fossil fuels from the Israel Electric Corporation, making it highly energy dependent. Raof El-Sheikh Samih of Hebron Electric Power Company (HEPCo) explained that this context has motivated municipalities to expand the share of renewables to achieve greater flexibility in the power supply system, improve energy sovereignty and efficiency, and increase the possibilities of supplying energy to isolated areas. Projects such as Hebron's **Sustainable Energy Action Plan (SEAP)** to develop solar PV on all municipal buildings, as well as the Palestine Investment Fund's proposal to finance around 500 rooftop PV on schools with a total capacity of up to 35 Megawatts in the West Bank, are vital initiatives for municipalities to achieve the abovementioned objectives.

Although the cities examined previously do not suffer the same structural issues as Hebron, the drafting of the SEAP included a diverse range of stakeholders such as NGOs and professional agencies. Moreover, the SEAP engages with citizens through an awareness campaign encouraging them to take ownership of energy issues and be active in the implementation of sustainable energy strategies. In any case, Hebron confirms that small steps can lead to big changes.

The Energy context in Spain: Lessons for Barcelona

Barcelona currently finds itself in the initial phase of transitioning to a sustainable energy model through the creation of **Barcelona Energia**, the public electricity distributor for the city. As the largest in Spain, it commercialises "locally produced 100% renewable energy" mostly from solar energy and supplies it to municipal buildings. Eloi Casas and Clara Rodríguez of the Metropolitan Area of Barcelona (AMB) explained how Barcelona Energia is just the beginning of a movement to "democratise" energy. This process includes: (i) treating energy as a right and public service; (ii) promoting an energy transition based on renewables, savings and efficiency; and (iii) eradicating energy poverty.

According to Rodríguez, the energy model in Spain is highly inefficient and incapable of responding to the current social, economic and environmental challenges facing the country. These include 15% of the population suffering from substantial **energy poverty**, unable to maintain adequate temperatures in their homes. According to the latest **Eurostat** statistics on electricity retail prices in the EU-28, Spain has the fourth highest prices at €0.24 per kilowatt-hour (kWh), whereas the EU average was €0.20 per kWh. Besides cost issues that relate

to grid operation and conventional power generation via hydrocarbon and nuclear plants, some structural impediments in the renewable sector also contribute to high Spanish tariffs. These include the so-called "sun tax" which involved a complex set of charges and tolls on electricity generated for self-consumption through PV, with the additional requirement that any surplus energy be returned to the network free of charge. In addition, there has been a lack of compliance by the national government in transposing the 2012 **European Energy Efficiency Directive** which "establishes a set of binding measures to help the EU reach its 20% energy efficiency target by 2020".

Nevertheless, recent legislative changes at EU and national levels reveal a paradigm shift seeking to revitalise self-consumption on the one hand and categorise energy as a right on the other. In this manner, the introduction of Spanish **legislation** in June 2018 is a step in the right direction to fight energy poverty and ensure a sustainable transition. Specifically, it removes the "sun tax", simplifies procedures for registration, and allows shared energy self-consumption. Considering the high population density in the Barcelona Metropolitan Area and the approximately 35–40% of citizens that rent apartments, this offers the possibility of implementing a neighbourhood solar supply model like *Mieterstrom*; however, because of the weak culture of housing associations it may be challenging for public authorities to implement this model in private dwellings.

Eva Garcia from CIDOB analysed how the goals of the remunicipalisation campaigns in Germany supported greater democratic control, climate protection, and social justice. Yet, in the case of Barcelona she asked whether the cultural dimension was lacking. In response, contributors recommended that Barcelona continue to raise awareness to change the perception of repurchasing the local grid as a profitable asset rather than an economic burden. Moreover, there needs to be active citizen engagement with energy issues so consumers understand that they can become agents of change through decentralised generation. This is a major reason why initiatives such as the one by AMB to make families owners of rooftop PVs in their children's schools did not materialise.

Policy Conclusions

- Aside from lower prices and better quality, remunicipalisation provides greater consumer empowerment.
- Attempts to remunicipalise must take into account specific local conditions such as the type of unbundling model, the efficacy of dispatchable and non-dispatchable renewable energy sources, and the level of decentralisation of the energy system.
- Hamburg and Berlin both represent bottom-up initiatives to remunicipalisation where citizens have combined their campaigns with the political process through referendums in order to take back ownership of the local grid.
- In order to democratise and successfully restructure the energy sector, policymakers need to incorporate technolog-

ical, economic, cultural and institutional dimensions into their energy strategies.

- In highly regulated electricity markets, the energy transition can be accelerated through public-private partnerships, as in Uruguay, or through sustainable action plans to improve energy efficiency and sovereignty, as in Hebron.
- While the Barcelona Energia and AMB initiatives are necessary for the energy transition in Barcelona, they must be accompanied by an awareness campaign that aims to engage citizens with energy issues.