Building Public Power

MUNICIPAL MANUAL FOR ENERGY TRANSITIONS

by James Angel and Lavinia Steinfort

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COLOPHON

The report *Building Public Power* contains the most important insights from and related to the mPower project up until August 2022. It sets out a municipal agenda for best practice to achieve fair, clean and democratic energy futures across Europe.

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If you want to know more about the reference municipal transition practices, please click on the hyperlinks in the online version: **www.municipalpower.org/publicpower**

The Transnational Institute (TNI) is an international research and advocacy institute committed to building a just, democratic and sustainable planet. For more than 40 years, TNI has served as a unique nexus between social movements, engaged scholars and policy-makers. TNI has gained an international reputation for carrying out well researched and radical critiques. As a non-sectarian institute, TNI has also consistently advocated alternatives that are both just and pragmatic, for example providing support for the practical work of public services reform. Find out more: **https://www.tni.org/en**

mPower is a Horizon2020 project that has enabled an in-depth, wide-scale and systematic peer-to-peer learning programme among at least 100 local public authorities, in order to replicate innovative best practices in municipal energy, and developing ambitious energy transition plans. The project is run by a consortium of Glasgow University (UK), Platform (UK), Energy Cities (EU-wide), Institute for Political Ecology (Croatia), Transnational Institute (Netherlands), University of the Basque Country, and Carbon Co-op (UK). Find out more: **https://municipalpower.org/**

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EXECUTIVE SUMMARY

The neoliberal model of energy transition is failing to deliver clean energy fast enough. Market liberalisation and privatisation do not support climate targets, instead deepening social injustices. This is true in wealthier countries and across the Global South, where land, labour and natural resources are frequently extracted to support the energy transition in Europe.

We cannot afford to wait for the market to deliver the fundamental transformation of the energy system that we need. Instead, public authorities must take the lead. This does not mean a return to top-down planning and bureaucracy. By democratising governance, fostering citizen participation and by collaborating with trade unions, cooperatives and other civil society organisations, public bodies can deliver just and democratic energy transitions.

By adopting a public goods approach, public authorities can take responsibility to reconceive energy as a fundamental right rather than a commodity. Values such as solidarity, sufficiency, self-determination, reciprocity, redistribution and regeneration can take centre stage.

Already municipalities are leading the way pushing ahead with public power transitions, planning and coordinating transition initiatives within their localities and alongside other public bodies. However, years of austerity and disinvestment by national governments have limited municipalities' resources and capacity to deliver ambitious energy policy effectively. If municipalities are to lead on energy transition, they need to be given the financial, legal and political means to do so.

Municipalities and public bodies have much to gain from new forms of collaboration and participation. By working with service users, citizen collectives and energy workers as much as possible — and on an equal basis — municipalities can expand their knowledge base and craft energy transitions that are locally embedded and embraced. Only by including the voices of citizens and giving them decision-making power can municipalities address the needs of the residents they serve. This way, injustices like energy poverty can be tackled effectively and energy use can be reduced.

This report sets out an agenda for best practice in municipal energy transition, focusing on the following tools: municipal coordination; democratic public ownership; participatory governance; public-community collaborations; collective knowledge production; municipal capacity building; cooperation and rebuilding across scales; and just transition from the rural to the urban.

The final section entails 10 take-aways for building public power transitions.

TOOLS FOR MUNICIPAL ENERGY TRANSITIONS

A. MUNICIPAL COORDINATION AND PLANNING

Under the EU's preferred approach of encouraging a markets and competition agenda, municipalities are positioned as market actors, whose task is to facilitate private entrepreneurialism and competition rather than address social and ecological needs. Public bodies find themselves heavily constrained in a strategic planning role in energy policy-making by the need to fit within market frameworks..

However, the market has not delivered, as is evidenced by the continued dominance of fossil fuels in the global energy mix alongside spiralling energy prices and worsening energy poverty. In fact, it is in contexts where governments and municipalities have thrown out the neoliberal rulebook that energy transitions have taken off. Research[1] by the University of the Basque Country for the mPower project shows that the most important factor determining the quantity of total renewable energy generated locally is the number of employees working on energy transition within the municipality. This demonstrates the importance of a municipality's capacity to devote resources and personnel to energy policy-making.

Coordination and planning are not a question of staffing alone. Our research repeatedly showed that municipalities are not able to deliver effectively on energy transition goals because of a lack of data pertaining to energy production and usage, which is often held in private hands. If municipalities are to play a fuller part, this urgently needs to change.

The energy efficiency sector provides an interesting illustration of the importance of municipal coordination and planning. Other research[2] by the University of the Basque Country shows that municipalities across Europe have had widespread success in enhancing the energy efficiency of municipal buildings, while simultaneously struggling to promote energy efficiency measures within private building stock. When municipalities have the legal and technical capacities to show leadership, they can deliver impressive results. In contrast, when they are left to attempt to manage the chaos of the private market, results are patchy.

Coordination and planning constitute distinct forms of municipal intervention. Municipal coordination refers to endeavours that comprehensively enhance the effectiveness of pre-existing arrangements and foster favourable conditions. For example, in Stuttgart,

Germany, the municipality has developed its own renovation standard to ensure high-quality, energy-efficient and durable retrofits with optimum comfort and price performance. Planning, on the other hand, implies a long-term strategy to design and create new initiatives. For example, in San Sebastián, Spain, the municipality's 2050 climate action plan sets out a vision for how imported fossil fuels can be replaced by locally controlled renewable energy, guided by the concept of 'energy sovereignty'. Or in Porto Torres, Italy, the municipality has piloted an innovative solar project that lowers the energy bills of low-income households and creates a revolving fund to continuously expand the scheme.

The case of Vienna, Austria, shows how municipal planning and coordination can be integrated to extremely powerful ends when combined with public ownership and stable political leadership. The city has been able to spearhead ambitious energy policies on the back of its extensive ownership of urban infrastructure and assets. Vienna is a world leader in municipal housing, owning 220,000 apartments — more than any other municipality worldwide. In turn, it has been able to introduce significant innovations within the energy efficiency realm, for example with its new apartment complex, MGG22, heated and cooled using geothermal and wind energy, leading to energy costs over 50 per cent lower than those within conventional apartments. What's more, Vienna has its own municipally owned energy provider. This municipal company operates a 1,200km district heating network, with an installed capacity of around 2,500 MW, supplying around 35 per cent of all apartments in the city in addition to over 6,000 business customers. The company has also introduced citizen-owned renewable generating initiatives that have seen a remarkable 10,000 residents invest €35 million into 26 solar and four wind power plants between 2012 and 2017, saving an estimated 17,000 tonnes of CO_2.

However, as important as planning and coordination are, they are meaningless if municipalities lack the capacity and resources to deliver on the plans they make. This represents a significant issue for municipal energy transitions, as will be discussed further later in the report.

B. DEMOCRATIC PUBLIC OWNERSHIP

The case of Vienna illustrates how ownership of key assets and infrastructures can prove pivotal for municipalities' capacity to deliver successful energy transition initiatives. If they do not own energy assets and infrastructures such as supply companies, generating assets, distribution grids and buildings, municipalities lack the control they need to introduce low-carbon interventions. Moreover, by owning energy infrastructures, municipalities are able to reap significant financial benefits, diverting funds away from wealthy private executives and shareholders and towards the public good.

However, public ownership is no guarantee of justice or democracy. Post-war models of public ownership were premised upon top-down control and bureaucracies that afforded little decision-making power to workers and citizens. As a result, public enterprises and services were sometimes not as responsive to on-the-ground needs as they could have been.

Indeed, the knowledge and expertise held by those who use energy and those who work in the energy sector constitute a vital re-

source for municipalities to draw upon. Municipalities have a responsibility to drive the transition but often lack the means to do so. By collaborating with workers and civil society they can instigate more effective, rapid and responsive transitions — by drawing on a diverse knowledge base and by putting people's interests at the heart of policy-making.

One way to do this is by democratising ownership: incorporating worker and citizen control and decision-making within formal ownership structures. The case of Niš, Serbia, helps demonstrate this. In 2013, Niš switched the billing system for district heating from an approach based on the size of a property to one that measures monthly consumption. An unintended consequence was higher energy bills for low-income and poorly insulated households, prompting widespread objections. The municipality responded by inviting residents to participate in a democratic process to explore solutions. Citizens are now represented in a special commission for price approval, alongside the board of the municipal district heating company. Whereas the problem in 2013 was a municipal company that failed to account for citizens' preferences, these new democratic ownership structures have ensured a better attuned service. For example, the district heating company recently consulted users on how to improve its billing system. Citizens who receive district heating now pay a little more in the winter months and a little less during summer, reflecting their preferences.

An alternative model for democratic public ownership comes from Wolfhagen, Germany. Here, a citizen cooperative owns a 25 per cent stake in the municipal energy company. The co-operative contributes to strategic decision-making through two representatives, who sit on the company's nine-member board. The board has overseen a move to more affordable tariffs and a near doubling of the number of staff, alongside financing initiatives to fund the town's kindergarten and an electric bike scheme.

Križevci, Croatia, offers another possible model. Here, the municipality partnered with a local cooperative to crowdfund a solar panel installation on the roof of a local business centre. The project is fully funded and owned by local citizens, whose capital serves as a loan to the municipality, who will eventually fully own the project after 10 years. The success of the project has inspired a similar solar development on the roof of a public library, alongside the establishment of the municipality's own energy cooperative. This kind of partnership between municipalities and citizen cooperatives represents one way in which citizens can take direct control and management over energy infrastructures. However a risk is that opportunities are available only for those wealthy enough to participate financially in schemes that do little to include or benefit those who lack the money or time to participate.

While citizen representation within formal ownership structures is one vital way in which people's knowledge and interests can be integrated within energy decision-making, other forms of citizen participation and input can be established outside of these structures — as will be explored in the next section.

C. PARTICIPATORY GOVERNANCE

It is important to recognise that attempts to facilitate participation can easily result in hollow and tokenistic schemes that do little to enable people to engage meaningfully.

For the real benefits of participation to be harnessed, participatory governance must be tied to structural decision-making power: legally enshrined consultation, deliberation and monitoring that involve residents and workers must actively feed into policy and practice.

One approach to participatory governance is one-off events that give people the chance to discuss and input on key decisions. For example, Brent Council in London, UK, has used citizen assemblies to give citizens power over local climate policy. These assemblies provided a space for up to 150 residents to learn, discuss, and debate their area's responses to the climate crisis. The diversity of the local population was reflected by randomly selecting members in line with the profile of the area. Throughout the events, members heard from a range of speakers who supported the group to define a series of recommendations. The recommendations presented by the Assembly were included within the Council's five-year climate strategy, with clear budgets assigned to first year actions.

Municipalities can also establish city-wide roundtables that offer a platform for more regular dialogue and meetings between citizens and officials. Cádiz, Spain, for example, has established an open Energy Transition Committee, where organisations, specialists and employees from the municipal energy company Eléctrica de Cádiz, academics and energy cooperatives work together. This committee sets priorities which guide next steps on policy. One of the Energy Transition Committee's first actions was to conduct a public energy inquiry through 450 face-to-face interviews. Interviewees said that they did not understand their energy bills. More than 90 per cent of participants also voiced their desires for a 100 per cent renewable model in Cádiz. This finding was backed up by the members of the Energy Transition Committee. As a result, the municipality decided to transform Eléctrica de Cádiz, the largest municipal energy company in Spain, into a renewable energy company, generating renewable energy in the city and supplying renewable energy to its customers. Another committee, the Roundtable Against Energy Poverty, was set up to respond to citizens' concerns around the affordability of energy for vulnerable families. Crucially, this initiative includes the direct participation of people living in energy poverty to shape policy — an initiative discussed in more depth later in the report.

Online tools can also be deployed productively to foster participatory governance. Barcelona has developed a virtual participative platform called Decidim, where citizens can propose, debate and back new proposals in response to challenges facing the city. Barcelona first used the tool to help shape their 2016–2019 Municipal Action Plan. Through Decidim, residents were invited to submit proposals that they would like to see implemented in the city. Residents did not hold back. Over 10,000 submissions were put forward by 40,000 residents, with 8,142 approved. The proposals were then synthesised to find common themes. On climate and energy, calls to create a municipal energy retailer, improve walking and cycling infrastructure and improve air quality were among the ideas included in the final plan.

Finally, municipalities can engage citizen participation at a more localised level through forms of neighbourhood engagement. In its 'Smarter Together' programme,

Munich, Germany, experimented with an innovative citizen co-creation model by turning the district of Neuaubing-Westkreuz/Frieburg into a site for discussion and experimentation on energy transition. The project used a variety of community engagement techniques to begin the dialogue. A communications campaign was launched, with its own website, newspaper and social media presence. To host public discussions, a former fitness centre was taken over as an information hub where residents could engage with the project team, hear about the project's findings and collaborate on solutions. Over the course of four years, 25 workshops took place in the centre, with 4,000 people engaging.

Another way for municipalities to learn from the expertise of citizens is to institute long-term collaborations with communities, which is the focus of the next section.

D. PUBLIC-COMMUNITY COLLABORATIONS

Public-community collaborations are another way to facilitate greater citizen participation by aspiring towards an equitable power relationship between the community and its local authority. They can take multiple different forms. One option for municipalities is to support the creation of a local energy collective. For example in Wolfhagen, Germany, the city council backed the creation of a citizen cooperative that now owns a 25 per cent stake in the municipal energy company. As a result of the partnership, 6 MW of new renewable energy generation has been financed and an energy-saving foundation created. At the end of 2016, BEG Wolfhagen had 814 members with a cooperative wealth of more than €3.9 million. With 7 per cent of Wolfhagen's population being members of the cooperative, this provides an easy route to engaging with large numbers of local citizens.

As an alternative to directly initiating an energy collective, municipalities can support the emergence of energy communities by creating favourable conditions. For example, in Plymouth, UK, the city council transferred ownership of municipal land to a community land trust, so that a new community-led energy project could be sited there. Low-cost loans from the municipality also supported the process. Plymouth Energy Community Renewables now supplies 6 MW of clean energy, enough to provide electricity for 2,000 homes, saving 72,500 tonnes of CO_2 over the 20 years of the project's lifetime. Host organisations have already saved over £450,000 from solar roofs.

Another option for municipalities interested in public-community collaborations is to partner with existing organisations. In Burgas, Bulgaria, the municipality gave citizens the chance to participate and input on its household retrofit schemes through its collaborations with homeowner associations. This helped gain citizen buy-in to the extent that Burgas has become the city with the most retrofitted buildings in Bulgaria. In Ghent, Belgium, the municipality has coordinated a multi-stakeholder partnership including three energy cooperatives to build and invest in local energy infrastructure. The municipality supported overall management, made links with other initiatives in the city, and coordinated between the various partners, including resolving conflicts. The cooperatives, meanwhile, helped facilitate citizen engagement. In Eeklo, Belgium, the municipality partnered with co-operative Ecopower to facilitate citizen investment in

three cooperatively owned wind turbines, generating 7.4 MWh per year, providing power for 6,700 homes and creating a saving of 2,900 tonnes of CO_2 per year.

Local energy collectives have the potential to play a vital role in public power transitions, presenting a valuable opportunity for municipalities to raise revenues, increase citizen collaboration and trust and promote new energy transition initiatives. Yet these public-community collaborations also present a number of challenges. One issue is power imbalances between municipalities and communities. In the case of Wolfhagen, for instance, community representation within the city's energy company only comes through representatives of the cooperative, rather than the community at large. What's more, there is no representation for energy company workers within this company's board

Another challenge is preserving the autonomy of community organisations so that they are not subsumed by the agendas of municipalities. Plymouth represents an example of best practice in this regard. While the municipality here played an important role in helping get the energy community off the ground, the energy community is an entirely independent cooperative, owned and run by its members. The relationship between the two organisations is defined by a service level agreement that sets out clear expectations and roles.

E. TACKLING ENERGY POVERTY

Soaring energy prices and rising energy poverty are a feature of energy liberalisation. There is no single unified definition of energy poverty, with governments across Europe adopting their own. Leading scholar Stefan Bouzarovski (2018) defines the concept as follows: 'Energy poverty occurs when a household is unable to secure a level and quality of domestic energy services — space cooling and heating, cooking, appliances, information technology — sufficient for its social and material needs.'[3] The issue is associated with an array of dangerous health conditions from cardiovascular problems through to mental health struggles — alongside countless preventable deaths each year. It is a vital concern for municipalities seeking to craft fair and egalitarian energy transition measures.

Retrofit and energy efficiency measures must be at the heart of efforts to address energy poverty. The following examples zoom in on different bits and pieces of what effective municipal action against energy poverty can look like. In Portsmouth, UK, the council decided to renovate a block of council housing following residents' complaints about high energy bills. Bills fell by £700 per year as a result of the project, evidencing just how much energy bills can drop following successful retrofit. Research undertaken by the local council in Plymouth, UK found that retrofit policies targeting the homes sof vulnerable households were the most effective in tackling energy poverty. As such, they have developed collaborations with 'anchor institutions' such as hospitals and schools in order to target vulnerable households for retrofit measures.

Local solar projects have also proved an inventive means of generating funding to support those in energy poverty. In 2017 Porto Torres, Italy, piloted a scheme in which they installed solar PV panels on citizens' homes, free of cost, targeting low-income households in particular. Any solar energy used by citizens equates to money

saved on their energy bills. In Zaragoza, Spain, the municipality has worked alongside an NGO to introduce a solar neighbourhood with two solar installations, generating a combined power of 100 kWp. 10 per cent of the total energy generated goes directly to those in energy poverty, free of charge. Users of the scheme have saved around 30 per cent on their energy bills. Aspropyrgos, Greece, has partnered with a local energy cooperative in a solar project — half of the energy generated is used to provide free electricity to vulnerable households.

In Barcelona, Spain, the municipality has undertaken pioneering work on energy poverty advice. The council has established 11 energy advice offices across the city, which offer free advice on energy poverty, energy rights and energy efficiency. They are also funding energy adviser home visits to offer energy audits and advice in people's homes.

As is the case across the energy sector, meaningful citizen involvement can be the difference between success and failure on energy poverty. As discussed previously, meaningful citizen participation and voice was crucial in Burgas's success with household retrofits: citizens were recruited by a promotional campaign and were then involved in the retrofit process through homeowner associations. In Cádiz, Spain, the municipality established a new Roundtable Against Energy Poverty to respond to citizens' concerns around the affordability of energy for vulnerable families. This brought together a number of groups and individuals, including people directly affected by energy poverty, to guide action on energy poverty in the city. The roundtable spearheaded policy on a new social bonus that guarantees vulnerable families the energy they need to live a dignified life, based on the number of household members. As always, the everyday knowledge of energy users proves a vital resource in creating policies that are as attuned to people's needs as possible.

F. COLLECTIVE KNOWLEDGE CREATION

Citizens provide a crucial knowledge base for municipalities seeking to institute energy transition initiatives. The purpose of an energy system, after all, is to support citizens to survive and thrive in their everyday lives through meeting basic needs such as cooking, heating, lighting and leisure. Energy users occupy a unique vantage point as to how an energy system is functioning. Citizens, then, offer an important source of expertise around questions such as what constitutes an affordable price, what makes good customer service, and the advantages and disadvantages of particular energy technologies. It is for this reason that collaborations between municipalities and citizens are so important: without opportunities for citizen participation, this invaluable knowledge is lost.

Municipalities can also benefit from the expertise held by two other key constituencies: energy sector workers, and other municipalities.

Beginning with workers, those who are employed within the energy sector are uniquely well-positioned to gain and offer insights around how transitions can be implemented in ways that serve people and the environment. After all, workers know very well what failed 'just transition' policies look like: from fossil industry employees whose livelihoods are threatened by the need to phase out their jobs, to workers within lithium supply chains forced to do dangerous and

exploitative work to service the growing demand for batteries.

Further, it is often workers that are leading the way towards transitions that work for people and the environment. In South Africa, for example, the National Union of Metalworkers (NUMSA) is fighting against the privatisation and unbundling of state-run utility Eskom, demanding a democratically owned renewable energy sector. Meanwhile, in Birmingham, UK, over 500 workers at the GKN automotive factory voted for strike action in 2021 to save their factory by transitioning to producing parts for electric vehicles. These workers put together a 90-page alternative plan setting out their vision for reorganising production in ways that would save money and advance the UK's low-carbon transition. It is exactly this kind of knowledge that can be mobilised by ensuring that workers take a central role in the participatory governance and democratic ownership structures discussed previously.

Municipalities can also benefit a lot from learning from each other. The mPower project was developed to facilitate this, bringing together municipalities from across Europe to learn from each other and share best practice on municipal energy transitions. The project consisted of several distinct learning streams. In mPower Exchange, municipalities worked together in groups to reflect on state-of-the-art examples across different themes including energy efficiency, energy communities and renewable generation, leading to the production of 23 replication plans setting out how each of the participating municipalities could integrate the learning in their distinct contexts. mPower Digital consisted of three online courses and mPower Activate established four public-public partnership incubators that fostered new collaborative projects between neighbouring municipalities. In parallel, five regional learning events were held.

The participating municipalities were eager to learn about each other's energy transition pathways. They were also willing to support each other in project planning, brainstorm about challenges, and even put collective knowledge into practice in the form of joint projects. Moreover, about two-thirds of the responding mPower Exchange participants indicated that they obtained significant to extensive new skills, knowledge and experience in relation to applying energy justice principles as well as citizen engagement, ownership and participation.

This highly positive feedback demonstrates municipalities' potential to benefit from peer learning and collective knowledge creation. By collaborating rather than competing, local authorities can advance energy transitions across municipalities and across borders. Decidim is a good example of this. This platform, which significantly increased the scope and ambition of Barcelona's energy plans, can be freely used by any other municipality or organisation. The cities of Helsinki and Tampere in Finland, Mexico City in Mexico and Pamplona in Spain have already picked up the platform as a tool to support their processes.

This open source, collectivised model of knowledge production and distribution stands in stark contrast with the patented and privatised enclosure of knowledge that currently dominates within the energy system due to the hegemony of large privatised utilities. As will be explored in the next

section, the privatisation of energy data restricts municipalities' ability to plan and deliver effective action on energy transition — one of many factors related to a more general lack of capacity faced by municipalities.

G. MUNICIPAL CAPACITY BUILDING

While municipalities have the potential to be leading actors within the energy transition, they often lack the necessary resources. This makes planning and targets futile — ambition on paper is nothing without the capacity to translate this into practice. A huge factor here is funding. Research [4] by the University of Glasgow for the mPower project shows that economic constraints are the biggest obstacle to municipal carbon reductions and municipal energy transition more broadly. Municipal officials participating in mPower cited financial difficulties as the most important challenge facing municipal energy transitions.

Much of the money that is available to municipalities over-emphasises novelty, prioritising pilot projects at the expense of long-term durable investment. Moreover, dominant market frameworks disadvantage municipalities who often lack the capacity and expertise to create complex economic models that demonstrate return on investment, and whose ability to explore alter native models of ownership is undermined by the EU's emphasis on private investment.

As well as inhibiting municipalities' potential to invest in renewable generation, limited finances are also stopping municipalities developing forms of citizen participation and democratic control. While municipalities participating in mPower expressed a widespread interest in new forms of democratic participation within the energy sector, many said that they lacked the resources to explore this kind of innovation.

Therefore, there is an urgent need to boost the funding available to municipalities for energy transition, and to reform dominant funding arrangements. The case of Burgas, Bulgaria, offers an example of the difference adequate funding can make. Burgas's aforementioned success in retrofitting public and residential buildings — which reduced residents' energy bills by one third — deployed a combination of EU funds, national funds and its own municipal budget. Ghent, Belgium, was able to take advantage of Flemish government interest-free energy loans. These loans allowed householders to borrow up to €30,000 to fund household solar installations, as part of a collaboration with local cooperatives geared towards maximising local renewable generation.

There is ample evidence elsewhere of municipalities taking innovative action to raise funds for energy transition schemes. For example, Swindon, UK, launched the UK's first council solar bond. Swindon worked with social investment organisation Abundance to attract 12,000 investors to put money into new solar projects. A low threshold for investment enabled 2 per cent of investors to offer as little as £5. With over a third of investment coming from in and around Swindon, financial benefits will stay local. Similarly, in Leuven, Belgium, new solar developments have been enabled through citizen investment: 830 kWp of new solar has been installed through €650,000 of citizen finance, facilitated through collaborations with two cooperatives.

Yet money is not the only issue pertaining to municipal capacity. Personnel is another huge

factor — as discussed previously, the single most important variable shaping the quantity of municipal renewable generation is the number of employees available to work on this. A further consideration that shapes municipal capacity on energy transition is the legal powers available to municipalities. Municipalities' ability to institute ambitious energy measures is often curtailed by the legislative frameworks within which they work. For example, in Spain, the national government introduced legislation that prohibited municipalities from establishing new municipal institutions. This meant that when Barcelona decided to set up a new municipal energy supply company, they had to do so through a pre-existing municipal waste management company, creating a number of technical and bureaucratic hurdles.

Municipalities have a vital role to play in the energy transition but, as should be clear from the discussion around capacity building, they cannot achieve the changes we need in isolation. To achieve a just and democratic energy transition on the scale required, local authorities and utilities must cooperate and work together — as is fleshed out further in the next section.

H. CO-OPERATION AND REBUILDING ACROSS SCALE

Public-public partnerships are collaborative relationships between public bodies to allow for the delivery of joint projects. They represent one important way that municipalities and other public institutions can co-operate across scales.

One form of public-public partnership sees municipalities partnering with each other to implement projects together that cut across city boundaries. The 17 municipalities that make up the metropolitan area of Porto, Portugal, for example, currently work together alongside local agencies to implement a collaborative energy transition for the region.

However, larger-scale generation and infrastructure beyond the scale of bigger municipalities is very often necessary. For one thing, while distributed renewable generation within urban settlements is important and should be maximised, cities will very likely remain dependent on importing a significant proportion of their energy from elsewhere — unlike towns and less densely populated regions. A recent paper by Trade Unions for Energy Democracy (TUED) estimated that rooftop solar PV has the potential to meet 18 per cent of the EU's electricity needs, yet only on the condition that every single rooftop in the region that is solar compatible has a PV system installed. Given that this level of ambition across the EU seems implausible, the figure is likely to be a lot lower, highlighting that relying on distributed generation alone is unfeasible.

This means that cities must begin to partner with the utility firms that currently control larger-scale electricity infrastructure and generating assets. This need not imply, however, the necessity of public-private partnerships, which have historically hollowed out public institutions and syphoned off profits to private investors. If we want an alternative to public-private partnerships, strategies to accelerate municipal transitions must go alongside strategies to reclaim and democratise utility firms.

TUED advocates for 'comprehensively reclaiming' the energy system. Comprehensive, meaning that all aspects of the energy system, including generation, technology supply chains, transmission, distribution and retail, are brought into public ownership. Reclaiming, meaning that alongside a shift from private to public ownership, the energy system must be de-marketised and run in accordance with the public good, rather than private profit.

TUED places comprehensively reclaiming public utilities at the heart of their vision. Their agenda for energy transition includes municipalities forging cooperative partnerships with utility firms that are under democratic public ownership and that adopt a public goods rather than profit-based approach.

The recent case of Utah, USA, helps to clarify what is at stake here. By early 2019, 23 municipalities in the state of Utah had signed an agreement committing to 100 per cent renewable electricity by 2030. As part of the efforts to meet this commitment, these municipalities partnered with private utility firm Rocky Mountain Power. Together, these parties drafted and presented the Community Renewable Energy Act to the state legislature, a bill that was passed into law that same year. At the heart of this bill was an agreement for Rocky Mountain Power to bulk purchase renewable electricity generated from the 23 participating cities. Yet, simultaneously, the bill removed incentives for decentralised generation, for example by cutting the subsidy to households involved in self-generating electricity by a third. The utility firm also began to solicit bids from private renewables developers.

This case illustrates the potential of partnerships between municipalities and large utility firms, with municipalities being able to benefit from the technical expertise and legal power that these larger scale operators represent. At the same time, the case shows the dangers of these kinds of partnerships, given the ways in which utility firms currently operate. With Rocky Mountain Power oriented around profit rather than the public good, their agenda was to undermine the threat to their business model posed by distributed generation, and their decision to prioritise private developers marginalised communities within the energy sector.

If, instead, municipalities start to organise to reclaim and democratise utilities — working in partnership to prioritise the public good rather than private gain — it would become more feasible to achieve decarbonisation and easier to strike a productive balance between large-scale and small-scale renewable projects, avoiding tensions between small-scale distributed generation projects and utilities.

Cooperation and partnership between municipalities in urban and rural locations are particularly important — the question turned to in the next section.

I. JUST TRANSITIONS ACROSS THE RURAL-URBAN SPECTRUM

Emerging networks of municipalities committed to ambitious action on low carbon transition are a promising and encouraging development, through which municipalities have emerged as key spaces for building just and democratic energy transitions. That said, historically, urban settlements in particular have been very dependent on rural lands and populations for their development.

Fossil fuel extraction has produced huge environmental and social costs, often borne by rural communities. A transition to renewable technologies will not automatically eliminate these kinds of harms. Low-carbon technologies such as solar panels, wind turbines, batteries and heat pumps currently rely upon minerals and metals extracted from rural areas, usually in the Global South, through highly exploitative and environmentally destructive supply chains.

Take the case of cobalt, essential within electric vehicle batteries. The World Bank has described as 'deplorable' the environmental and social impacts of cobalt extraction and production in the Democratic Republic of Congo, which produces over 64 per cent of cobalt globally. The extraction of cobalt has been linked to biodiversity loss; water, land and air pollution; and health issues for local people including birth defects, thyroid disruption and lung disease. Cobalt mining has resulted in mass displacement, child labour and violence. Other minerals such as lithium and cadmium are associated with similar issues. Without challenging the injustices within these supply chains, municipal energy transitions risk reproducing an uneven and exploitative relationship between an urban core and the rural periphery.

Land is also a thorny issue. Solar and wind power are far more land-intensive than dominant forms of fossil energy generation. As such, the transition from fossil to renewable energy brings with it a risk of land grabs from rural spaces, dispossessing and disadvantaging surrounding communities.

One key implication in practice, is that municipal energy transition should be arranged to minimise the need for minerals, metals and land. For instance, instead of planning for cities with high levels of private electric vehicle ownership, cities can invest instead in public transport and active travel infrastructure such as cycling lanes and pedestrianisation. Another implication is that retrofit and energy efficiency are of paramount importance: by reducing energy demand, cities can minimise the need for new renewable generating assets and the associated materials and geographic space involved in their production and in the transmission of energy. Brussels, Belgium, has taken another important step in equalising relations between urban and rural locations, committing to count indirect emissions in their climate accounting — emissions generated outside Brussels, but within processes that service energy consumption within the city.

Across both the Global South and North, a key issue is that of who benefits from renewable energy projects located in rural locations. Solar and wind projects are often enforced by private developers on rural populations who get no say in the matter, and who receive none of the benefits — with the electricity generated being used to power urban consumption and the profits generated accruing to private investors and shareholders. The concept of energy sovereignty advocated by social movements across much of Latin America and Spain is premised upon the idea that people themselves have the right to control and benefit from the energy projects underway in their territory. The sovereignty of rural peoples must be upheld in the planning of municipal energy transitions, meaning that the needs of urban populations for expanded renewa-

ble energy production should not override the rights of rural people to define their own relationship to the energy system — as discussed previously, the transition plans of San Sebastián, Spain, are guided by this vision of energy sovereignty. Should this sovereignty be overridden, energy transitions will reinforce and extend the historic marginalisation of rural peoples across the Global North and South, as a result of ongoing processes of urbanisation and rural disinvestment.

If cities cannot meet all their energy needs from within their own borders, and need to be in relationship with other territories, is there a positive way to imagine those relationships? What kinds of political, social, labour, and cultural practices could help to build relationships that are equitable rather than extractive, and that share equally the benefits (and costs) of the transition? These are vital questions going forward.

One simple implication of this discussion is that when discussing public power transitions, the concept and framing of the 'municipality' is more helpful than discourses that exclusively centre cities — anchoring these debates around 'municipalities' is immediately more inclusive of peri-urban spaces, towns and villages. At the same time, while the concept of the municipality provides a generative bridge between urban and rural spaces, we must acknowledge that rural municipalities face their own distinctive challenges when it comes to energy transition. Remote villages and islands, for example, sometimes struggle to connect to centralised energy infrastructures. This can bring unique difficulties in terms of energy access and energy poverty. But it can also present interesting opportunities for self-management and democratic control.

Take, for instance, the prevalence of community energy schemes across the Scottish Hebrides island archipelago, in the UK. Its Isle of Eigg has a community owned, managed and run off-grid system has a maximum use limit of 5kW per household and 10kW per business at any one time, to ensure that everybody has enough.

In sum, just and democratic energy transitions would need to be about more than bettering the condition of urban workers, citizens and environments and instead be reconceived as a vision that serves people and planet across borders, scales and regional divides.

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TEN TAKE-AWAYS FOR BUILDING PUBLIC POWER

1. THE MARKET DOES NOT KNOW BEST

The dominant neoliberal model of privatisation and liberalisation is getting in the way of low-carbon energy transitions. While investment in renewables is growing, the rate of renewables investment globally is far outstripped by rising energy demand. We are in the midst of an energy expansion, rather than an energy transition — the drive for profit and growth above all else makes rational coordination and planning impossible.

Meanwhile, advances in community and municipal energy are disadvantaged by competitive market structures, further reinforced by the EU. Research[5] by the University of Glasgow for the mPower project shows that the European Investment Bas have been pushing local authorities towards market-based solutions which aim to draw in private investments. In addition, many funding streams are too complex for smaller actors to benefit from and emphasise novelty rather than long-term, sustained investment. And visions of an energy system premised upon local generation by empowered 'prosumers' threaten to leave behind those wholack the money and time to invest in household clean energy technologies.

Harmful market policies and beliefs need to be challenged. Instead, we need a public goods approach, which can hardwire social and environmental values into the energy system and can facilitate collective decision-making and action across scales.

2. DEMOCRATISING PUBLIC OWNERSHIP

Public ownership of assets and infrastructure can help public bodies plan and deliver energy transition measures quickly and effectively due to the associated capacitiesc for control and planning. However, as the post-WW2 model of energy nationalisation showed, top-down public bureaucracies do not guarantee just and democratic transitions.

What we need, then, is a new vision of public ownership premised upon thoroughgoing democratisation and bottom-up participation. A range of new democratic forms are needed: citizens and workers on the boards of public institutions; policy-making shaped by participatory forums and roundtables; online tools that allow mass participation. We need to put the people back into public ownership.

3. A JUST TRANSITION, NOT JUST A TRANSITION

The concept of 'just transition' has been a powerful tool for advancing workers' rights within the energy transition, deployed by trade unions across the world to demand a fair deal for energy sector employees whose livelihoods are threatened by the move away from fossil fuels.

However, one limitation of just transition discourses thus far is that they have tended to focus upon the rights and interests of a largely white and male energy sector workforce within the Global North. This needs to change. Just transition must be about advancing the position of workers across the world, including precarious, unpaid, landless, migrant and unemployed workers — these forms of labour are rife across the multiple diverse sectors, industries and spaces of the low carbon transition.

A truly just transition means valuing and redistributing the invisible and unpaid forms of domestic, caring and reproductive labour disproportionately taken on by women. Advocating for a shorter working week for everyone, for example, could allow for these crucial forms of reproductive labour to be spread more evenly across genders.

What's more, just transition advocates must recognise and seek to rectify the forms of racial injustice bound up in the current energy system, ranging from the overexposure to pollution and extractive industries experienced by people of colour and Indigenous Peoples, through to the overwhelming whiteness of many community energy groups within the Global North.

4. DEFENDING THE RIGHT TO ENERGY

Energy is currently commodified, a product to be bought and sold on the market. Accordingly, those who lack the access to pay for energy are excluded from the energy system, resulting in energy poverty, associated serious health difficulties and avoidable deaths due to excess cold and heat.

We need to recognise, instead, that energy is a basic right — we all need to cook food, heat and cool our homes to safe levels, light up our living spaces, use computers and the Internet and enjoy the leisure activities that electricity facilitates. As such, we must move towards approaching essential energy use as a fundamental right that we are all entitled to.

Defending the right to energy means eradicating energy poverty and fighting against cut-offs for those who cannot pay. It means retrofitting our homes and workplaces to stop them leaking heat and leaving people to freeze in winter and overheat in summer. And it means rethinking the ways that energy is priced and distributed. In Cádiz, Spain, for example, the municipality has introduced a social tariff to guarantee that vulnerable households have the energy they need to live a dignified life.

5. AVOID THE LOCAL TRAP

'Small is beautiful' has been an influential slogan within the environmental movement, emphasising the importance of localised micro-scale measures. Within the energy sector, decentralised generation and community energy have been celebrated for their democratising potential.

However, there is no guarantee that decentralised or smaller scale initiatives are any more democratic than initiatives at other scales. Community energy initiatives, for example, can at times be quite exclusive, offering decision-making power and financial benefits only to those with the capital to invest. What's more, distributed generation alone will never be sufficient for meeting our energy needs. It's vital that we expand distributed generation as much as possible — but this will always need to sit alongside policy-making and action at bigger scales.

This includes thinking about the large utility firms that currently control transmission infrastructure and larger generating assets. Building public power transitions will require a multi-pronged approach, combining rapid and effective action at the municipal scale with strategies to reclaim and rebuild publicly owned utility firms. Ultimately, the way forward is public-public partnerships between democratised municipal, national and international institutions, working together to facilitate system change across scales.

6. AGAINST GREEN EXTRACTIVISM

Expanding investment in 'clean' energy technologies such as wind turbines, solar panels, heat pumps and batteries is driving new forms of green extractivism, due to rising demand for minerals and metals such as lithium, cobalt, copper and nickel. This is spelling disaster for communities on the frontline of mining initiatives and exploited workers working in low-paying and dangerous industries — as well as causing devastating ecological impacts.

The fight for low carbon energy transitions must go hand in hand with the struggle against green extractivism. This means backing transition measures that reduce energy demand within the Global North, such as retrofitting buildings and prioritising public transport and active travel over private electric vehicles. It means extending solidarity with movements and communities in the Global South standing up against toxic mining. And it means drawing on policies proposed by advocates of circular economies and de-growth that minimise waste and reorientate production and consumption practices around the needs of people and ecosystems across borders.

7. REBUILDING PUBLIC CAPACITY

For good reasons, municipalities are increasingly touted as key players within the energy transition. However, at present, municipalities lack the capacity and resources required to plan and deliver energy transitions effectively.

This is a question of personnel: municipalities often have very few employees working on energy issues and therefore lack the workforce necessary to get things done. It is a question of data: key energy data is often held in private hands, out of reach of municipalities, making planning and coordination very difficult. It is a question of legal power: national and international legislative frameworks often leave municipalities with their hands tied. And it is a question of money, with municipalities lacking the funding required to deliver meaningful and ambitious action.

If municipalities are to play a fuller part, we have to give them the backing and power they need to do this. Without transforming dominant political, legal and economic architectures, discourses of municipal power transition will remain hollow.

8. COLLABORATE!

An additional and vitally important way that municipalities and other public bodies can build capacity is through collaboration. Public bodies can collaborate with each other to share knowledge and best practices, to gain economic advantages through economies of scale, and to co-create policies that transcend local boundaries and borders. What's more, public bodies can collaborate with citizens and workers to coproduce policies that prioritise their needs and interests.

In forging these kinds of collaborations, public bodies gain new sources of knowledge and expertise. Through their positioning on the frontline of the energy system, workers and users gain a unique vantage point through which the effectiveness, fairness and everyday functioning of the energy system can be seen. By combining this tacit and embodied knowledge with the technical know-how of those with specialist energy expertise, public bodies can deliver energy transitions that are more responsive and, ultimately, more successful.

9. RECLAIMING INFRASTRUCTURE

Alongside retail companies and generating assets, comprehensive and effective public power transitions demand the reclaiming of key infrastructures. This includes energy system infrastructures such as distribution and transmission networks, as well as the key infrastructures associated with energy demand including building stock and transportation infrastructures.

OOwning and controlling these infrastructures is essential for planning, coordination and control over pricing. The case of Vienna, Austria, discussed above, shows this: their level of ambition has been enabled by the municipality's extensive ownership of the city's housing stock, alongside its district heating network.

The question of infrastructure and its ownership becomes all the more pertinent in the move towards 'smart cities' and smart electricity grids. As infrastructures such as electricity transmission and distribution networks become digitalised, their role becomes increasingly complex nd important. Without public oversight and accountability over new smart infrastructures, we risk extending the power of big technology firms and further enclosing invaluable data in private hands.

10. ENERGY SOVEREIGNTY

Drawing on the concept of energy sovereignty popularised across Latin America and Spain, public power transitions should respect people's territorial sovereignty and their right to define their own relationship to the energy system. This means that people should not have energy developments forced upon their communities and land against their will.

This is particularly important for rural peoples and spaces, who risk becoming instrumentalised in the service of cities' expanding demand for the resources and land required for new renewable energy developments.

Avoiding this kind of extractive relationship between an urban core and its rural periphery means giving rural communities the right to control and benefit from the land and energy developments in their surroundings.

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ENDNOTES

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The municipal manual *Building Public Power* sets out an agenda for best practice to achieve fair, clean and democratic energy futures across Europe.

For more information about the mPower project:
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The municipal manual *Driving Public Power* sets out an agenda for best practice to achieve fair, clean and democratic energy futures across Europe.

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