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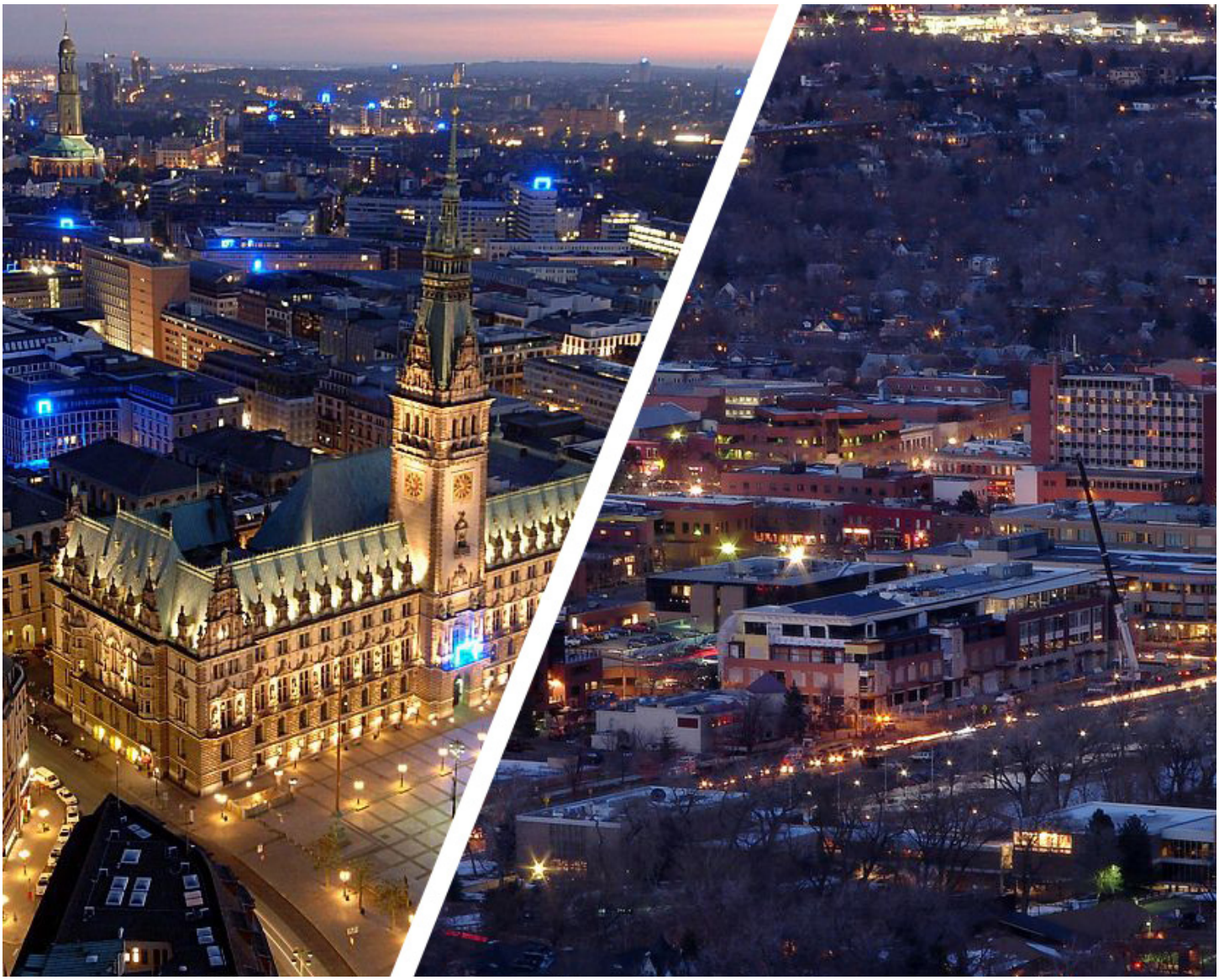

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Authors: Charleen Fei and Ian Rinehart
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Heinrich Böll Stiftung

Washington, D.C. Office
1432 K Street, NW
Suite 500
Washington, D.C. 20005
United States
T +1 202 462 7512
F +1 202 462 5230
E info@us.boell.org
www.us.boell.org

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The fight for the Grid in Boulder, CO

In November 2013, voters from the city of Boulder approved Question 2E. This ballot measure set, among other details concerning utility choices and customer service standards, a target price of $214 million for the purchase of grid assets by the city back from Xcel, a privately owned major utility which currently services more than 3.3 million electric customers across multiple regions in the United States.

Question 2E has been lauded as a "resounding victory" in a "David vs. Goliath battle" by municipalization proponents. However, the battle is not yet over. Uncertainties remain about the administrative and acquisition details of the grid buyback, and the Colorado Public Utilities Commission has stepped in to assert its jurisdiction over Xcel assets. The resulting appeal of this decision by the city of Boulder in January 2014 is still pending.

One thing is certain: this measure has created the flexibility for Boulder city government officials and residents to start engaging—at least preliminarily—in the first steps of constructing of a local electric utility.

But why is the Boulder municipalization initiative so important?

To many observers, the events which took place in Boulder indicated not only a singular political victory for a local initiative, but the first victory of many 'citizen initiatives' to follow. If Boulder brokeaway from its private utility, the argument goes, this could spark a larger trend across the United States: from a localized community campaign to nationwide municipalization movement.

The city, for its part, hopes to be a leading example for other communities. It is currently creating a 'roadmap' that could be used as an informative resource for other cities looking to municipalize their energy grids, particularly those focused on an increased pace of implementation for distributed generation or cleaner energy portfolios.

This is one possible outcome. However, the impact of the Boulder municipalization initiative must also be considered in the larger context—that of the very unique regulatory and political energy landscape in Boulder, and in the United States.

Boulder is not the first, nor will it likely be the last, community in the United States to municipalize its grid. There are currently more than 2000 communities served by public utilities, either through municipalization or Community Choice Aggregation (CCA) in the United States.

However, although some of these municipalization or CCA efforts were driven by the desire to control the mix or sources of power production, Boulder is the first city in the United States to municipalize specifically to reduce carbon emissions and increase the percentage of clean energy in its energy portfolio to meet concrete climate goals.

An assessment of Boulder's voting demographic provides telling insight into the outcome of the November 2013 vote. Boulder is home to the National Institute of Standards and Technology as well as to the National Center for Atmospheric Research. The National Renewable Energy Laboratory (NREL), the U.S. Department of Energy's (DOE) primary national laboratory for renewable energy and energy efficiency research and development, stands a mere 18 miles (30 km) away. After adjusting for city size, a recent report found Boulder to be the number one city in the United States for high tech startups.

Boulder's citizens are largely politically liberal and socially progressive. In contrast to much of the United States, Boulder's population is uniquely educated about energy issues, invested in renewable energy technology, and willing to put in place the necessary political and regulatory measures to cut carbon emissions. Boulder remains the first and only city in the United States to have implemented a tax on carbon emissions from electricity.

To depict Xcel as the typical conservative American utility would be an unfair assessment. As an overall provider, Xcel has consistently been ranked in the top 15 utilities in the United States for its renewables portfolio and conservation programs, as well as being the number one wind energy provider in the United States for the last nine years.

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Yet, in spite of this track record, Xcel has had a less than ideal relationship with the city of Boulder. The first problem emerged in the arena of managing public relations between Xcel and the Boulder citizens. Prior to the municipalization movement, Boulder was the pilot city for Xcel's "Smart Grid City" initiative, which promised to create a "fully integrated smart grid community with what is possibly the densest concentration of these emerging technologies to date".

However, what the citizens of Boulder were led to expect was far from what Xcel was ultimately able to offer. The project struggled to keep costs under control from the outset, installed only 101 out of 1845 promised smart devices, and lost support of partner companies. Whether it was poor expectation management on the part of Xcel or a deeper flaw in its project planning, the fact remained that the "Smart Grid City" failure left Xcel with a less than favorable public image even before grassroots organizations began campaigning for municipalization.

The second critical point of contention lies at the heart of Xcel's business model, and the current business model of most private utilities: a lack of flexibility with regards to electricity offerings.

Electricity consumption accounted for 59.6 percent of the city of Boulder's energy consumption in 2010, according to City's 2010/2011 Climate Action

Plan Progress Report. In order for Boulder to reach its 2050 climate goals, it would have to increase the amount of electricity produced from renewable sources.

However, Boulder's electricity as provided by Xcel came from Xcel's larger Colorado power supply mix. Almost 80 percent of this mix is from fossil fuels – 56 percent coal and 22 percent natural gas – and about 22 percent from renewable energy sources, comprised mostly of wind power.

Despite its desire to do so, Boulder could not separate its energy consumption from the larger Colorado power supply mix. This meant Xcel was unable to provide Boulder with a customized energy portfolio centered on renewable sources.

This inflexibility is a trait shared by many private utilities. For most communities, this is not an issue. For a city like Boulder—uniquely progressive in terms of renewable energy in comparison to its peers in Xcel's Colorado service territory—this frustrating inability to control the sources of its energy supply directly affected its ability to meet city climate goals.

This, combined with the earlier "Smart Grid City" flop, created an impression of a service provider that was neither willing nor able to meet its consumers' needs. For over 65% of Boulder citizens, the choice between the status quo and a municipal utility was clear.

So, is the Boulder municipalization movement important? Yes, but perhaps not for the reasons with which it has been credited.

Boulder's informed and energy-progressive voting demographic is not yet the norm in the United States as it is in Germany since the onset of the Energiewende. The ideal situation of Boulder being the first in a new trend of mainstream citizen energy initiatives is likely to remain just that—an ideal.

The most compelling argument for a municipalized energy grid in Boulder remains in the potential and free space for experimental energy policies on a community level. Xcel must make business decisions in the interest of its whole service territory, of which Boulder comprises only a small percentage.

Municipal utilities, on the other hand, may be able to create innovative energy service offerings, utilizing demand side management to trim peak loads and increase efficiency. The importance of the Boulder municipalization initiative lies in this promise.

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The Re-municipalization of the Hamburg Grid

While Boulder's energy-aware and politically liberal citizens make it an outlier in Colorado, these attributes describe a large percentage of German citizens.

Germany is in the midst of an ambitious energy transition movement, known as the Energiewende, which seeks to eliminate fossil fuels as energy sources,

phase out nuclear energy, and increase the use of renewable energy sources. According to a 2013 survey by the German Consumer Advice Center, 93% of citizens are aware of the Energiewende and more than 80% support its goals.

In this environment, one would expect utilities to move aggressively to decarbonize and invest in renewables. However, almost the opposite has occurred. As of 2013, renewable energy was responsible for 23.4% of electricity generation. German utilities only owned 11.9% of this capacity, meaning they have lost 88.1% of the renewable market, and roughly 20% of the total electricity generation market.

Clearly, German utilities have failed to find value in these new sources of energy production. As the CEO of the German utility RWE recently admitted at a press conference, "We were late entering into the renewables market—possibly too late".

Since 2007, over 60 municipal utilities have been formed in Germany and over 170 communities have attempted to purchase pieces of the energy grid back from private providers.

The consequence of this inaction has been an erosion of trust from the German public and the increasing viewpoint from citizens that large utilities, in particular, are not seriously concerned with the environmental goals of the Energiewende. According to a 2009 survey, 81% of citizens trusted local municipal utilities while only 26% of citizens trusted large corporations.

This has given credence to municipalization proponents and forced utilities to fight on the defensive. Since 2007, over 60 municipal utilities have been formed in Germany and over 170 communities have attempted to purchase pieces of the energy grid back from private providers.

It is against this backdrop that an initiative known as 'Our Hamburg, Our Grid' formed in 2010 to purchase Hamburg's energy, gas, and district heating supply back from Vattenfall and E.On, two large, privately owned utilities.

Three years later, in September 2013, 50.9% of voters in Hamburg, Germany, voted in favor of a re-municipalization referendum. In January of 2014, the city of Hamburg agreed to purchase the energy grid from Vattenfall for between 495 and 550 million Euros (690 - 765 million USD). Talks to purchase the gas and district-heating infrastructure are still underway, with a preliminary purchase price of between 1.25-1.45 billion Euros (1.75-2 billion USD) being discussed when contracts expire in 2018 and 2019 respectively.

What sets the Hamburg initiative apart from other re-municipalization efforts in Germany?

Hamburg, with more than 1.8 million residents, is Germany's second most populous city. The sheer size of this movement was unprecedented and demonstrated the ability of campaigners to mobilize average citizens around the idea of local grid control. On top of this, Hamburg's governing party, the Social Democrats (SPD), actively campaigned against the movement with strong support from business associations, Vattenfall, and other political parties such as the conservative CDU and the libertarian FDP.

The successful referendum in spite of heavy political and industry resistance can be attributed to a number of factors. 'Our Hamburg, Our Grid' effectively

spread its vision of "a socially equitable, climate-friendly and democratically controlled energy supply from renewable energy." They argued that such a vision could only be achieved through placing the energy infrastructure in public hands. Vattenfall, as the logic went, was a self-interested, multinational company—how could it possibly be working in the best interest of citizens when it also had to watch its bottom line?

With this message as their rallying call, the initiative attracted over 50 groups throughout Germany to join their alliance. The breadth of these groups—from anti-nuclear groups and pro-environmental groups opposing Vattenfall's ownership of nuclear and coal plants, to anti-corporate groups wary of Vattenfall's profit incentives, to a parish of the Lutheran church supporting democratic environmental stewardship—contributed heavily to the success of the movement. These groups added legitimacy, promoted the initiative's message, and provided experienced volunteers to engage in grassroots campaigning.

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While the initiative worked hard to spread its message of energy democracy and municipal control, Vattenfall did little to shed its negative portrayal as a monolithic, profit-driven utility. During the campaign, chief representative Pieter Wasmuth stressed Vattenfall's role as a "reliable partner," while anti-buyback commentators frequently cited the high cost, some 2 billion Euros, of purchasing the electricity, gas, and district-heating infrastructure.

Both of these are valid points, and Vattenfall has done a particularly good job of providing reliable power as citizens in Hamburg experience only 15 minutes of power loss on average per year. But these messages did little to address the core grievances of the initiative. 'Our Hamburg, Our Grid' was quick to remind people: Vattenfall still owns two nuclear reactors in the vicinity of Hamburg, Vattenfall still owns two of the dirtiest brown-coal plants in Europe, and Vattenfall has done little to invest in renewable energy outside of offshore wind.

In this ideological battle, 'Our Hamburg, Our Grid' brought the heavier weaponry.

'Our Hamburg, Our Grid' stressed the importance of citizen participation in bringing the Energiewende to fruition. They then devised a low-cost and clear means for citizens to assert their voice and accelerate the goals of the Energiewende, namely by voting YES for the grid buyback.

Boulder and Hamburg: Similarities and Differences

From a small, progressive American city nestled in the Flatiron foothills of the Rocky Mountains to a bustling German Hafencity with a wind-turbine dotted coastline, citizens and their local governments have come together to decide the future of energy procurement and distribution in their respective cities.

On the surface, the end results of both initiatives look similar. However, we illuminate some important differences, which may affect the future outcomes

of the grid buyback in Boulder, Colorado and Hamburg, Germany.

In both cases, the campaign for municipalization was cast by competing parties—rhetorically and literally—as a battle for ownership over the energy grid. In both cases, well-organized grassroots initiatives, along with engaged, energy-educated citizens, buoyed the case that controlling the grid infrastructure would empower citizens and the city to achieve accelerated climate goals. Utility providers, on the other hand, focused on traditional media campaigning and struggled to connect directly with citizens.

While the importance of the campaigning and voting demographic cannot be understated, it is also important to stress that there existed in both cases the legal and regulatory backdrop necessary for a successful grid buyback.

In Boulder, the existence of a franchise renewal model for energy service providers allowed the city to refuse to renew Xcel's franchise agreement. This offered Boulder citizens with a window of opportunity to pass a ballot measure, which ultimately granted the city of Boulder the right to purchase grid assets from Xcel and form its own municipal utility.

In Hamburg, stipulations included in the original agreement to privatize the grid left the city with 25.1% ownership and the ability to end the contract following a referendum. The successful passage of the referendum included language that legally obligated the city to re-purchase the grid from private hands. Currently, several providers are bidding to administer the grid. Regardless of provider, the city will be able to dictate the terms of the contract and incorporate the stipulations from the referendum in a public-private partnership model.

The very different political and cultural contexts in which these municipalization initiatives have occurred will greatly affect the implications in their respective countries.

At the same time, the very different political and cultural contexts in which these municipalization initiatives have occurred will greatly affect the implications in their respective countries.

In Germany, major utilities have found themselves on the losing end of a renewable policy that has empowered a number of other actors to enter the market. As citizens continue to support the goals of the Energiewende and concurrently seek energy providers that are aligned with these values, German major utilities will either have to update their business models or struggle to create value in this new energy landscape. For these utilities, the success of the Hamburg grid buyback is yet another confirmation of the new business environment to which they must adapt. In other words, while Vattenfall was the target of ire in the case of Hamburg, any large German utility would have faced a similar attack on the basis of its environmental record and inability to connect with German consumers.

In the United States, the future landscape for energy providers is less clear. There have been a few notable municipalization initiatives similar to Boulder, CO, where citizens feel utilities are not moving quickly enough. The city of Austin, Texas, as well as that of Sacramento, California, are testaments to this growing sentiment. However, these cases remain outliers. In the dialogue about energy provision and the future of renewables in the United States,

there is a significant absence of a unifying concept as emblemized by the Energiewende.

As a result of this lacking federal guidance, utilities in the United States retain significant latitude both to influence local policy decisions and to design systems, which could benefit both consumers and producers. This has led to a patchwork progression of the energy sector, in which some states have seen their utilities trying to stop renewables through tariffs and surcharges, while utilities in others embrace them as the future.

Hope for a more coordinated approach may lie in the very American emphasis on choice and self-reliance—values that can be embraced by parties across the entire political spectrum. In Georgia and Arizona, the desire for increased energy competition brought Tea Party Republicans alongside Sierra Club environmentalists to oppose tariffs on new solar panels. Even the cofounder of the Atlanta Tea Party Patriots acknowledges the uniqueness of the situation: "We agree on the need to develop clean energy, but not much else."

Hope for a more coordinated approach may lie in the very American emphasis on choice and self-reliance—values that can be embraced by parties across the entire political spectrum.

The American general public has yet to fully enter this debate, which is why cases such as Boulder are being watched so closely both domestically and overseas.

If Boulder is successful in what it has promised its voters—access to an increased renewables portfolio without an excessive increase in electricity prices—its accomplishment could be one more convincing argument for other cities looking at energy provision alternatives. If Boulder succeeds at creating innovative programs with regards to demand side management, trimming peak loads, and distributed generation, the success would not only be for Boulder's citizens, but for all those seeking to learn from its example. Let the trial and error begin.